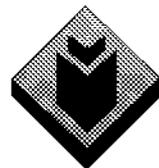


SUPERSEDED

Building Code of Australia

Volume One

Class 2 to Class 9 Buildings



ABCB

Australian Building Codes Board



CCH AUSTRALIA LIMITED

SUPERSEDED

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The Building Code of Australia (BCA) is produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Commonwealth Government and each State and Territory Government.

The BCA is published in this loose-leaf service by CCH Australia Limited on behalf of the ABCB.

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Amdt 0

ISBN 1 86264 872 7 (Class 2-9 Buildings)
1 86264 873 5 (Class 1 and Class 10 Buildings)
1 86264 875 (set) } First published in October 1996

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HOW TO USE

GENERAL INFORMATION

The Building Code of Australia (BCA) is in two loose-leaf volumes. It is written and maintained by the Australian Building Codes Board (see “Introduction”) and is published in conjunction with CCH Australia Limited.

COLOURED TABS

This publication contains a number of basic divisions, each marked distinctively by a coloured “tab card” — see, for example, the yellow tab card in Volume One “C — Fire Resistance”. The tabs provide a “bird’s-eye-view” of the contents of each division. Each tab division has its own table of contents indicating the various matters treated in that tab.

COLOUR HIGHLIGHTING

To assist in the use of the BCA, blue shading is used to highlight “Section”, “Part” and similar headings and “Application” and “Limitation” clauses associated with “Objectives”, “Functional Statements” and “Performance Requirements”.

Also, dark blue edge strips identify “Objectives”, “Functional Statements” and “Performance Requirements” pages and light blue edge strips identify “Specifications”.

PAGE NUMBERS

Page numbers, located at the top of each page, are used primarily for the purpose of filing new updates.

You may notice gaps in the page numbering sequence. These are necessary in a loose-leaf publication so that new material can be easily inserted. Where such a gap occurs, there is a reference to what the next page number will be, for example:

[Next page is 2,501]

CLAUSE NUMBERS

Within each Section, there are a number of clauses (or specifications).

The number of the relevant clause (or specification) appears at the bottom of each page within a tab division.

INDEX

There is a separate Index under the red tab card marked “Index • Abbreviations and Symbols”. It covers the deemed-to-satisfy provisions in the Code. References in the Index are to clauses or specifications.

ABBREVIATIONS AND SYMBOLS

Abbreviations and symbols used in the BCA are conveniently located in the red tab division “Index • Abbreviations and Symbols”.

HISTORY OF AMENDMENTS

See under the blue tab division “History of Amendments” for an ongoing record of all amendments to the BCA.

LOOSE-LEAF UPDATES

A loose-leaf update contains pages that need to be filed (as a result of amendments to the BCA) into the volume. Each loose-leaf update is accompanied by a Filing Record sheet which tells you which pages to remove from the volume and which new ones to insert.

UPDATE NUMBER

Each odd-numbered page of a loose-leaf update includes an update number located at the top left corner. For example:

2-12-96

This update number indicates that the page was inserted by Update No 2 issued in December of 1996.

AMENDMENT NUMBER AND DATE OF ADOPTION

The amendment number, its date of adoption and a summary of changes are provided with the loose-leaf update. It is important to check the date of adoption as it may not be the same for all States and Territories.

Amendments to clauses of the BCA are indicated on the relevant pages.

HOW TO FILE

LOOSE-LEAF UPDATES

As amendments to the BCA occur, CCH mails to subscribers an update consisting of new loose-leaf pages. A loose-leaf update is always accompanied by filing instructions telling which pages to remove and which new pages to insert. Once the new pages have been inserted, the Filing Record sheet itself should be filed under the pink tab marked "Filing Record".

FILING NEW UPDATES

Each new update is accompanied by a numbered Filing Record sheet with filing instructions for new pages. Once the new pages have been inserted, the Filing Record sheet itself should be filed under the pink tab card marked "Filing Record".

Before inserting the pages of a new update, always check the number of the last update. This will ensure that no updates are unfiled. (See "Update number".)

HELP IN FILING

The Filing Record sheet which lies on the top of the loose-leaf pages of each update gives specific instructions for filing the loose-leaf pages of that update in the binder. More general instructions on report filing are set out below:

Opening the 5-ring binder. To file the sheets you are, of course, required to open the rings of the binder. If the binder is new, first remove the small cardboard wedge that was inserted near the base of the binder for shipment purposes only. To open the binder, lay it flat on the desk and pull the lever towards you. To close the binder, push the lever back to ensure that it "clicks" and so is properly locked. During filing, there is no need to "click" it every time – only when the filing has been completed.

Before you file any update. Always check under the pink "Filing Record" tab to ensure that your BCA is filed right up to date. The number of the last update filed in your BCA appears on the last Filing Record sheet filed in that tab division. This ensures that no update remains unfiled.

Filing. The filing instructions are on the Filing Record sheet. Put this filing sheet to one side for easy reference and file the remaining loose-leaf pages in accordance with the instructions given. The instructions require you to remove certain pages from the binder and insert certain pages.

Page numbering. Sometimes more pages are inserted than are removed; sometimes the opposite happens. There are often gaps in the page numbering sequence. This allows for “growth”. Where a page gap occurs, there is a statement of the number of the next page underneath the page number on the preceding page. The page number is the number in bold type at the top corner of each page.

Old pages. The pages removed from the BCA no longer form part of the Code. In some instances it may be appropriate to retain these pages for future reference associated with buildings constructed while they were current. **Where removed pages are retained they should be kept in a separate folder to prevent confusion with replacement pages.**

Final step. The final step in filing is always to take the Filing Record sheet and use it to replace the previous Filing Record sheet in the “Filing Record” tab. This enables you to check that your filing is up to date. There should only be one Filing Record sheet in this tab division at any given time.

Comparing old and new pages. “New” and “old” pages can be identified by the update number. (See “Update number”.) New pages will bear the latest update number.

Do you need more help? For customer service support, please don’t hesitate to contact CCH. *Telephone:* Sydney 1 300 300 224. *Facsimile:* 1 300 306 224.

INTRODUCTION

THE BUILDING CODE OF AUSTRALIA

The Building Code of Australia (BCA) is produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Commonwealth Government and each State and Territory Government.

The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia. It allows for variations in climate and geological or geographic conditions.

THE AUSTRALIAN BUILDING CODES BOARD

The ABCB is established by agreement between the Commonwealth Government and each State and Territory Government. It is a co-operative arrangement between the signatories, Local Government and the building industry.

It is responsible to the Planning, Housing and Local Government Ministerial Council, and has a mission to achieve nationally consistent performance based building regulatory systems that are efficient, cost effective and meet community and industry needs.

The Board comprises:

- (a) the principal officer of each State and Territory administration responsible for building regulatory matters;
- (b) a representative of the Commonwealth;
- (c) a representative of the Australian Local Government Association (ALGA); and
- (d) industry representatives.

The Building Codes Committee (BCC) is the peak technical advisory body to the ABCB, with responsibility for technical matters associated with the BCA.

The BCC comprises:

- (a) the Executive Director of the ABCB;
- (b) one nominee each of the Commonwealth, State, Territory and ALGA members of the ABCB; and
- (c) industry members appointed by the ABCB.

THE BCA - CONTENT

GOALS

The goals of the BCA are to enable the achievement and maintenance of acceptable standards of structural sufficiency, safety (including safety from fire), health and amenity for the benefit of the community now and in the future.

These goals are applied so that the BCA extends no further than is necessary in the public interest, is cost effective, easily understood, and is not needlessly onerous in its application.

1996 EDITION

The 1996 edition of the BCA is published in two volumes:

Volume One	pertains primarily to Class 2 to 9 buildings
Volume Two	pertains primarily to Class 1 and 10 buildings (houses, sheds, carports, etc)

Both volumes are drafted in a performance format to provide greater flexibility for the use of new and innovative building products, systems and designs.

A user may choose to comply with the Deemed-to-Satisfy Provisions or may use an Alternative Solution that satisfies the Performance Requirements.

The Deemed-to-Satisfy Provisions in this edition generally are the same as those contained in the 1990 edition of the BCA, as amended, and include other changes resulting from the ongoing technical improvement program.

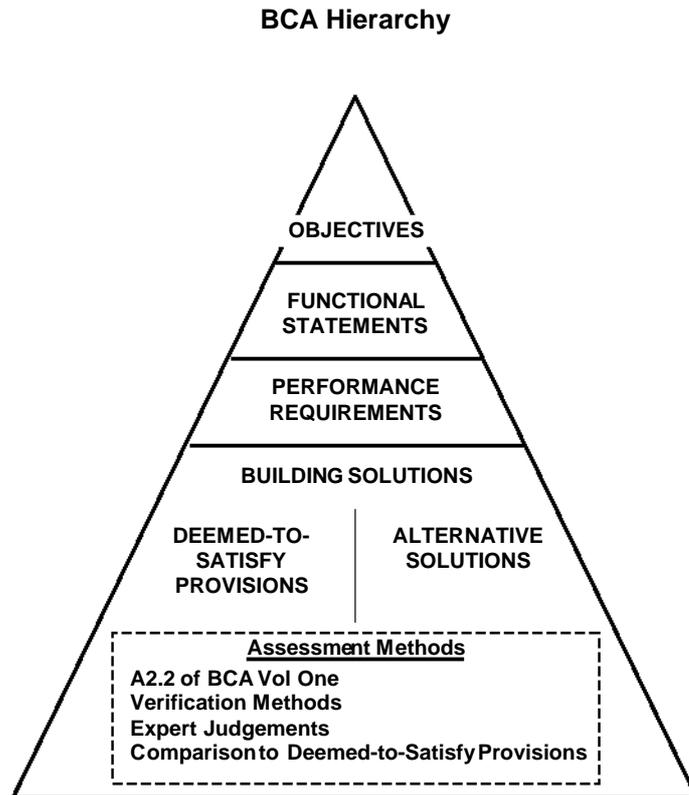
STATE AND TERRITORY VARIATIONS AND ADDITIONS

Each State's and Territory's legislation adopts the BCA subject to the variation or deletion of some of its provisions, or the addition of extra provisions. These variations, deletions and additions are contained in Appendices to the BCA.

Variations to clauses and Tables are identified in the margin. Additional clauses to a Part of the BCA are identified at the end of that Part and in the Section Contents. New Parts and Specifications are identified in the relevant Section Contents.

THE BCA PERFORMANCE HIERARCHY

The 'performance hierarchy' is outlined in the following diagram:



The Hierarchy Explained

Objectives

The Objectives set out community expectations. An Objective clause is located at the beginning of each Section or Part as appropriate.

Functional Statements

The Functional Statements describe how buildings achieve the Objectives. One or more Functional Statements follow the Objectives.

Performance Requirements

The Performance Requirements outline the levels of performance which must be met in order for a building to meet the Objectives and the Functional Statements. One or more Performance Requirements follow the Functional Statements.

Applications and Limitations

Applications or Limitations are applied to Objectives, Functional Statements and Performance Requirements as appropriate to prescribe the circumstances in which provisions do or do not apply. The Applications or Limitations are shown in shaded boxes following the appropriate provisions.

Building Solutions

The means of achieving the Performance Requirements are called Building Solutions. The BCA provides for two process pathways which can be followed to develop Building Solutions.

These are:

Deemed-to-Satisfy Provisions

The Deemed-to-Satisfy Provisions contained in the BCA include examples of materials, components, design factors and construction methods which, if complied with, are conclusive proof that the Performance Requirements have been satisfied.

Alternative Solutions

Alternative Solutions are proposals that differ in whole or in part from the Deemed-to-Satisfy Provisions and include materials, components, systems, design factors and construction methods that can be demonstrated to-

- (a) comply with the relevant Performance Requirements; or
- (b) at least perform in an equivalent manner to the Deemed-to-Satisfy Provisions.

In either case, the relevant authority, as determined by the building regulatory legislation in each State and Territory, must be satisfied that the proposal-

- (a) complies with the Deemed-to-Satisfy Provisions; or
- (b) where an Alternative Solution is used-
 - (i) complies with the Performance Requirements; or
 - (ii) at least performs in an equivalent manner to the Deemed-to-Satisfy Provisions.

Assessment Methods

There are a number of Assessment Methods that can be used to determine whether a proposal complies with the Deemed-to-Satisfy Provisions or, where Alternative Solutions are used, complies with the relevant Performance Requirements.

These Assessment Methods may include one or any combination of the following:

- Documentary evidence as described in A2.2.
- Verification Methods

Verification methods may include the following:

 - (a) Calculations - using analytical methods or mathematical models.
 - (b) Tests - using a technical procedure either on site or in a laboratory to directly measure compliance with one or more performance criteria.
 - (c) Other methods accepted by the relevant authority.
- Comparison with Deemed-to-Satisfy Provisions

Where Alternative Solutions are used, comparison with the relevant Deemed-to-Satisfy Provisions to determine that they at least perform in an equivalent manner.
- Expert Judgements

The opinions of suitably qualified and experienced technical experts.

DEFINITIONS

Words with special meanings are printed in italics and are defined in A1.1.

LEGISLATIVE ARRANGEMENTS

GENERAL

The BCA is given legal effect by building regulatory legislation in each State and Territory. This legislation consists of an Act of Parliament and subordinate legislation which empowers the regulation of certain aspects of buildings and structures, and contains the administrative provisions necessary to give effect to the legislation.

Any provision of the BCA may be overridden by, or subject to, State or Territory legislation. The BCA must therefore be read in conjunction with that legislation. Any queries on such matters should be referred to the State or Territory authority responsible for building regulatory matters.

ADMINISTRATIVE PROVISIONS

Administrative provisions covered in the building regulatory legislation may include-

- Plan submission and approval procedures.
- Issue of approvals or permits.
- Inspections during and after construction.
- Provision of evidentiary certificates.
- Issue of certificates of occupancy or compliance.
- Accreditation or approval of materials or components.
- Review and enforcement of standards.
- Fees and charges.

BCA ADOPTION

The adoption of the 1996 edition of the BCA is addressed in Part A0 of Volume One.

PERFORMANCE IN PRACTICE

In drafting this edition of the BCA, the ABCB intends that each level in the hierarchy is superior to that below it. This means that in meeting the Performance Requirements the relevant Functional Statements and Objectives are also met.

For the assessment process of a building proposal associated with the issuing of a building license, building approval, building permit or the like, it is intended that the Objectives and Functional Statements are only used where necessary to assist in the interpretation of the Performance Requirements. For this process it is not intended that a building proposal be assessed against either the Objectives or Functional Statements.

For any appeal assessment process, it is not intended that the above restrictions apply.

FURTHER DEVELOPMENT OF THE BCA

Regular amendments are planned to the BCA to improve clarity of provisions, upgrade referenced documents and to reflect the results of research and improved technology.

COMMENTS

Comments in writing on any matter concerning the text, presentation or further development of the BCA are invited from building and other authorities, industry organisations, professional operatives and the public generally. These comments should be addressed to:

Executive Director
Australian Building Codes Board
GPO Box 9839
CANBERRA ACT 2601

Amdt 0

SECTION **A**

Amdt 0

GENERAL PROVISIONS

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- A1 Interpretation**
- A2 Acceptance of Design and Construction**
- A3 Classification of Buildings and Structures**
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Functional Statements AF2.1 - AF2.3

Performance Requirements AP2.1 - AP2.3

A2.0 Deemed-to-Satisfy Provisions

A2.101 Hazardous materials

Amdt 0

PART A0 APPLICATION

A0.1 Adoption

The date of adoption of the 1996 edition of the Building Code of Australia (Volume One and Volume Two) is-

- (a) the 1st of July 1997 for the Commonwealth and in the Australian Capital Territory, Queensland, Tasmania, Victoria and Western Australia; and
- (b) to be determined by New South Wales, Northern Territory and South Australia.

A0.2 BCA Volumes

- (a) This is Volume One of the Building Code of Australia 1996 which contains the requirements for-
 - (i) all Class 2 to 9 buildings; and
 - (ii) access requirements for people with disabilities in Class 10 buildings; and
 - (iii) certain Class 10 structures.
- (b) Volume Two contains the requirements for-
 - (i) Class 1 and 10 buildings (other than access requirements for people with disabilities in Class 10 buildings); and
 - (ii) certain Class 10 structures.

PART A1 INTERPRETATION

For additional definitions see-
NSW Appendix
Qld Appendix
Vic Appendix

A1.1 Definitions

In the BCA unless the contrary intention appears -

Accessible means having features to permit use by people with disabilities.

Accessway means a continuous accessible path of travel to or within a building suitable for people with disabilities as defined in AS1428.1.

Alpine area means land-

- (a) likely to be subject to significant snowfalls;
- (b) in New South Wales, A.C.T. or Victoria more than 1200 m above the Australian Height Datum; and
- (c) in Tasmania more than 900 m above the Australian Height Datum.

Alteration, in relation to a building, includes an addition or extension to a building.

Assembly building means a building where people may assemble for-

- (a) civic, theatrical, social, political or religious purposes; or
- (b) educational purposes in a *school*, *early childhood centre*, preschool, or the like; or
- (c) entertainment, recreational or sporting purposes; or
- (d) transit purposes.

Atrium means a space within a building that connects 2 or more *storeys*, and-

- (a) is wholly or substantially enclosed at the top by a floor or roof (including a glazed roof structure); and
- (b) includes any adjacent part of the building not separated by an appropriate barrier to fire; but
- (c) does not include a stairwell, rampwell or the space within a *shaft*.

Atrium well means a space in an *atrium* bounded by the perimeter of the openings in the floors or by the perimeter of the floors and the *external walls*.

Automatic, applied to a fire door, smoke door, solid core door, fire shutter, *fire window*, *smoke-and-heat vent*, sprinkler system, alarm system or the like, means designed to operate when activated by a heat, smoke or fire sensing device.

Average recurrence interval, applied to rainfall, means the expected or average interval between exceedances of a given intensity.

Backstage means a space associated with, and adjacent to, a *stage* in a Class 9b building for scenery, props, equipment, dressing rooms, or the like.

Carpark means a building that is used for the parking of motor vehicles but is neither a *private garage* nor used for the servicing of vehicles, other than washing, cleaning or polishing.

Certificate of Accreditation means a certificate issued by the ABCB or a State or Territory accreditation authority stating that the properties and performance of a building material or method of construction or design fulfil specific requirements of the BCA.

Combustible means-

- (a) Applied to a material - *combustible* as determined by AS 1530.1.
- (b) Applied to construction or part of a building - constructed wholly or in part of *combustible* materials.

Common wall means a wall that is common to adjoining buildings.

Curtain wall means a *non-loadbearing external wall* that is not a *panel wall*.

Designated bushfire prone area means land which has been declared by appropriate legislation to be likely to be subject to bushfires.

Early childhood centre means a preschool, kindergarten or child-minding centre.

Effective height means the height to the floor of the topmost *storey* (excluding the topmost *storey* if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units) from the floor of the lowest *storey* providing direct egress to a road or *open space*.

NSW, Vic
(Early childhood
centre)

Evacuation route means the continuous path of travel (including *exits, public corridors* and the like) from any part of a building, including within a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part, to a *safe place*.

Evacuation time means the time calculated from when the emergency starts for the occupants of the building to evacuate to a *safe place*.

Exit means-

- (a) Any, or any combination of the following if they provide egress to a road or *open space* :
 - (i) An internal or external stairway.
 - (ii) A ramp.
 - (iii) A *fire-isolated passageway*.
 - (iv) A doorway opening to a road or *open space*.
- (b) A *horizontal exit* or a *fire-isolated passageway* leading to a *horizontal exit*.

External wall means an outer wall of a building which is not a *common wall*.

Fire brigade means a statutory authority constituted under an Act of Parliament for the protection of life and property from fire and other emergencies.

Fire compartment means-

- (a) the total space of a building; or
- (b) when referred to in-
 - (i) the Objectives, Functional Statements or Performance requirements- any part of a building separated from the remainder by barriers to fire such as walls and/or floors having an appropriate resistance to the spread of fire with any openings adequately protected; or
 - (ii) the Deemed-to-Satisfy Provisions - any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that *required* for a *fire wall* for that type of construction and where all openings in the separating construction are protected in accordance with the deemed-to-satisfy provisions of the relevant Part.

Fire hazard means the danger in terms of potential harm and degree of exposure arising from the start and spread of fire and the smoke and gases that are thereby generated.

Fire intensity means the rate release of calorific energy in watts, determined either theoretically or empirically, as applicable.

Fire-isolated passageway means a corridor, hallway or the like, of *fire-resisting construction*, which provides egress to or from a *fire-isolated stairway* or *fire-isolated ramp* or to a road or *open space*.

Fire-isolated ramp means a ramp within a *fire-resisting* enclosure which provides egress from a *storey*.

Fire-isolated stairway means a stairway within a *fire-resisting shaft* and includes the floor and roof or top enclosing structure.

Fire load means the sum of the net calorific values of the *combustible* contents which can reasonably be expected to burn within a *fire compartment*, including furnishings, built-in and removable materials, and building elements. The calorific values must be determined at the ambient moisture content or humidity. (The unit of measurement is MJ).

Fire-protective covering means-

- (a) 13 mm fire-protective grade plasterboard; or
- (b) 12 mm cellulose fibre-reinforced cement sheeting complying with AS 2908.2; or
- (c) 12 mm fibrous plaster reinforced with 13 mm x 13 mm x 0.7 mm galvanised steel wire mesh located not more than 6 mm from the exposed face; or
- (d) other material not less fire-protective than 13 mm fire-protective grade plasterboard,

fixed in accordance with the normal trade practice for a *fire-protective covering*.

Fire-resistance level (FRL) means the grading periods in minutes determined in accordance with Specification A2.3, for the following criteria -

- (a) *structural adequacy*, and
- (b) *integrity*, and
- (c) *insulation*,

and expressed in that order.

Note: A dash means that there is no requirement for that criterion. For example, 90/-/- means there is no requirement for an FRL for integrity and insulation, and -/-/- means there is no requirement for an FRL.

Fire-resisting, applied to a *structural member* or other part of a building, means having an FRL appropriate for that *structural member* or other part.

Fire-resisting construction means one of the Types of construction referred to in Part C1.

Fire safety system means one or any combination of the methods used in a building to-

- (a) warn people of an emergency; or
- (b) provide for safe evacuation; or
- (c) restrict the spread of fire; or
- (d) extinguish a fire,

and includes both active and passive systems.

Fire-source feature means-

- (a) the far boundary of a road adjoining the allotment; or
- (b) a side or rear boundary of the allotment; or
- (c) an *external wall* of another building on the allotment which is not a Class 10 building.

Fire wall means a wall with an appropriate resistance to the spread of fire that divides a *storey* or building into *fire compartments*.

Flammability Index means the index number as determined by AS 1530.2.

Floor area means-

- (a) in relation to a *storey* - the area of that *storey* measured over the enclosing walls (if any) and that part of any *common wall* located within the allotment; and
- (b) in relation to a room - the area of the room measured within the finished surfaces of the walls, and includes the area occupied by any cupboard or other built-in furniture, fixture or fitting.

Habitable room means a room used for normal domestic activities, and-

- (a) includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room and sunroom; but

- (b) excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods.

Health-care building means a building whose occupants or patients undergoing medical treatment generally need physical assistance to evacuate the building during an emergency and includes -

- (a) a public or private hospital; or
 (b) a nursing home or similar facility for sick or disabled persons needing full-time nursing care; or
 (c) a clinic, day surgery or procedure unit where the effects of the predominant treatment administered involves patients becoming non-ambulatory and requiring supervised medical care on the premises for some time after the treatment.

Horizontal exit means a *required* doorway between 2 parts of a building separated from each other by a *fire wall*.

Illuminance means the luminous flux falling onto a unit area of surface.

Insulation, in relation to an FRL, means the ability to maintain a temperature on the surface not exposed to the furnace below the limits specified in AS 1530.4.

Integrity, in relation to an FRL, means the ability to resist the passage of flames and hot gases specified in AS 1530.4.

Internal wall excludes a *common wall* or a party wall.

Lightweight construction means construction which incorporates or comprises-

- (a) sheet or board material, plaster, render, sprayed application, or other material similarly susceptible to damage by impact, pressure or abrasion; or
 (b) concrete and concrete products containing pumice, perlite, vermiculite, or other soft material similarly susceptible to damage by impact, pressure or abrasion; or
 (c) masonry having a thickness less than 70 mm.

Loadbearing means intended to resist vertical forces additional to those due to its own weight.

Mezzanine means an intermediate floor within a room.

Qld (Open space)

Non-combustible means-

- (a) Applied to a material - not deemed *combustible* as determined by AS 1530.1 - Combustibility Tests for Materials.
- (b) Applied to construction or part of a building - constructed wholly of materials that are not deemed *combustible*.

Open-deck carpark means a carpark in which all parts of the parking *storeys* are cross-ventilated by permanent unobstructed openings in not fewer than 2 opposite or approximately opposite sides, and-

- (a) each side that provides ventilation is not less than 1/6 of the area of any other side; and
- (b) the openings are not less than 1/2 of the wall area of the side concerned.

Open space means a space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.

Open spectator stand means a tiered stand substantially open at the front.

Other property means all or any of the following-

- (a) any building on the same or an adjoining allotment; and
- (b) any land on an adjoining allotment; and
- (c) a road.

Outdoor air means air outside the building.

Outfall means that part of the disposal system receiving *surface water* from the drainage system and may include a natural water course, kerb and channel, or soakage system.

Panel wall means a non-loadbearing *external wall*, in frame or similar construction, that is wholly supported at each *storey*.

Patient care area means a part of a *health-care building* normally used for the treatment, care, accommodation, recreation, dining and holding of patients including a *ward area* and *treatment area*.

Private garage means-

- (a) any garage associated with a Class 1 building; or
- (b) any single *storey* of a building of another Class capable of accommodating not more than 3 vehicles, if there is only one such *storey* in the building; or
- (c) any separate single *storey* garage associated with another building where such garage is capable of accommodating not more than 3 vehicles.

Professional engineer means a person who is-

- (a) if legislation is applicable - a registered *professional engineer* in the relevant discipline who has appropriate experience and competence in the relevant field; or
- (b) if legislation is not applicable-
 - (i) a Corporate Member of the Institution of Engineers, Australia; or
 - (ii) eligible to become a Corporate Member of the Institution of Engineers, Australia, and has appropriate experience and competence in the relevant field.

Public corridor means an enclosed corridor, hallway or the like which-

- (a) serves as a means of egress from 2 or more *sole-occupancy units* to a *required exit* from the *storey* concerned; or
- (b) is *required* to be provided as a means of egress from any part of a *storey* to a *required exit*.

Registered Testing Authority means-

- (a) the National Building Technology Centre (NBTC);
- (b) the CSIRO Division of Building, Construction and Engineering (CSIRO-DBC&E);
- (c) an authority registered by the National Association of Testing Authorities (NATA) to test in the relevant field; or
- (d) an organisation outside Australia recognised by NATA through a mutual recognition agreement.

Required means required to satisfy a Performance Requirement or a Deemed-to-Satisfy Provision of the BCA as appropriate.

Vic (Residential aged care building)

Residential aged care building means a building whose residents, due to their incapacity associated with the ageing process, are provided with physical assistance in conducting their daily activities and to evacuate the building during an emergency.

Resistance to the incipient spread of fire, in relation to a ceiling membrane, means the ability of a ceiling membrane to insulate the space between the ceiling and roof, or ceiling and floor above, to limit the temperature rise of *combustibles* in this space during the *Standard Fire Test* to 180 K above the initial temperature.

Rise in storeys means the greatest number of *storeys* calculated in accordance with C1.2

Safe place means-

- (a) a place of safety within a building-
 - (i) which is not under threat from a fire; and
 - (ii) from which people must be able to safely disperse after escaping the effects of an emergency to a road or *open space*; or
- (b) a road or *open space*.

Sanitary compartment means a room or space containing a toilet fixture, closet pan, soil pan, chemical toilet or the like.

Sarking-type material means a material such as a reflective foil or other flexible membrane of a type normally used for a purpose such as water proofing, vapour proofing or thermal reflectance.

School includes a primary or secondary school, college, university or similar educational establishment.

Self-closing, applied to a door or *window* means equipped with a device which returns the door or *window* to the fully closed and latched position immediately after each manual opening.

Service station means a garage which is not a *private garage* and is for the servicing of vehicles, other than only washing, cleaning or polishing.

Shaft means the walls and other parts of a building bounding-

- (a) a well, other than an *atrium well*; or
- (b) a vertical chute, duct or similar passage, but not a chimney or flue.

Site means the part of the allotment of land on which a building stands or is to be erected.

Sitework means work on or around a *site*, including earthworks, preparatory to or associated with the construction, *alteration*, demolition or removal of a building.

Smoke-and-heat vent means a vent, located in or near the roof for smoke and hot gases to escape if there is a fire in the building.

Smoke-Developed Index means the index number for smoke as determined by AS 1530.3.

Sole-occupancy unit means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and includes-

- (a) a dwelling; or
- (b) a room or suite of rooms in a Class 3 building which includes sleeping facilities; or
- (c) a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building.

Spread-of-Flame Index means the index number for spread of flame as determined by AS 1530.3.

Stage means a floor or platform in a Class 9b building on which performances are presented before an audience.

NSW (Stage)

Standard Fire Test means the Fire-resistance Tests of Elements of Building Construction as described in AS 1530.4.

Storey means a space within a building which is situated between one floor level and the floor level next above, or if there is no floor above, the ceiling or roof above, but not-

- (a) a space that contains only-
 - (i) a lift *shaft*, stairway or meter room; or
 - (ii) a bathroom, shower room, laundry, water closet, or other *sanitary compartment*; or
 - (iii) accommodation intended for not more than 3 vehicles; or
 - (iv) a combination of the above; or
- (b) a *mezzanine*.

Structural adequacy, in relation to an FRL means the ability to maintain stability and adequate *loadbearing* capacity as determined by AS 1530.4.

Qld (Swimming pool)

Structural member means a component or part of an assembly which provides vertical or lateral support to a building or structure.

Surface water means all naturally occurring water, other than sub-surface water, which results from rainfall on or around the *site* or water flowing onto the *site*, including that flowing from a drain, stream, river, lake or sea.

Swimming pool means any excavation or structure containing water and used primarily for swimming, wading, paddling, or the like, including a bathing or wading pool, or spa.

Treatment area means an area within a *patient care area* such as an operating theatre and rooms used for recovery, minor procedures, resuscitation, intensive care and coronary care from which a patient may not be readily moved.

Ward area means that part of a *patient care area* for resident patients and may contain areas for accommodation, sleeping, associated living and nursing facilities.

Window includes a roof light, glass panel, glass block or brick, glass louvre, glazed sash, glazed door, or other device which transmits natural light directly from outside a building to the room concerned when in the closed position.

A1.2 Adoption of Standards and other references

Where a deemed-to-satisfy provision adopts a Standard, rule, specification or provision included in any document issued by Standards Australia or other body, that adoption does not include a provision-

- (a) specifying or defining the respective rights, responsibilities or obligations as between themselves of any manufacturer, supplier or purchaser; or
- (b) specifying the responsibilities of any trades person or other building operative, architect, engineer, authority, or other person or body; or
- (c) requiring the submission for approval of any material, building component, form or method of construction, to any person, authority or body other than a person or body empowered under State or Territory legislation to give that approval; or

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- (d) specifying that a material, building component, form or method of construction must be submitted to Standards Australia or a committee of Standards Australia for expression of opinion; or
- (e) permitting a departure from the code, rule, specification or provision at the sole discretion of the manufacturer or purchaser, or by arrangement or agreement between the manufacturer and purchaser.

A1.3 Referenced Standards, etc

A reference in a deemed-to-satisfy provision to a document under A1.2 refers to the edition or issue, together with any amendment, listed in Specification A1.3 and only so much as is relevant in the context in which the document is quoted.

A1.4 Differences between referenced documents and the BCA

The BCA overrules in any difference arising between it and any Standard, rule, specification or provision in a document listed in Specification A1.3.

A1.5 Compliance with all Sections of BCA

Subject to A1.6, Class 2 - 9 buildings must be so designed and constructed that they comply with the relevant provisions of Sections A to I (inclusive) of the BCA.

A1.6 Application of the BCA to a particular State or Territory

For application within a particular State or Territory, of the BCA comprises-

- (a) Sections A to I (inclusive); and
- (b) the variations, deletions and additions to Sections A to I applicable to that State or Territory specified in the relevant Appendix.

A1.7 Language

- (a) A reference to a building in the BCA is a reference to an entire building or part of a building, as the case requires.
- (b) A reference in a Performance Requirement of the BCA to “the degree necessary” means that consideration of all the criteria referred to in the Performance Requirement will determine the outcome appropriate to the circumstances. These words have been inserted to indicate that in certain situations it may not be necessary to incorporate any specific measures to meet the Performance Requirement.
- (c) A reference to “BCA” in this volume, other than in the Introduction, means “Volume One of the Building Code of Australia 1996”.

PART A2 ACCEPTANCE OF DESIGN AND CONSTRUCTION

A2.1 Suitability of materials

Every part of a building must be constructed in an appropriate manner to achieve the requirements of the BCA, using materials that are fit for the purpose for which they are intended.

A2.2 Evidence of suitability

- (a) Subject to A2.3 and A2.4, evidence to support that the use of a material, form of construction or design meets a Performance Requirement or a deemed-to-satisfy provision may be in the form of one or a combination of the following:
- (i) A report issued by a *Registered Testing Authority*, showing that the material or form of construction has been submitted to the tests listed in the report, and setting out the results of those tests and any other relevant information that demonstrates its suitability for use in the building.
 - (ii) A current *Certificate of Accreditation*.
 - (iii) A certificate from a *professional engineer* or other appropriately qualified person which-
 - (A) certifies that a material, design or form of construction complies with the requirements of the BCA; and
 - (B) sets out the basis on which it is given and the extent to which relevant specifications, rules, codes of practice or other publications have been relied upon.
 - (iv) A Standards Mark Certificate issued by Standards Australia.
 - (v) A current SSL Product Listing Data Sheet and listing in the latest issue of the Scientific Services Laboratory Register of Accredited Products - Fire Protection Equipment.
 - (vi) Any other form of documentary evidence that correctly describes the properties and performance of the material or form of construction and adequately demonstrates its suitability for use in the building.

- (b) Any copy of documentary evidence submitted, must be a complete copy of the original report or document.

A2.3 Fire-resistance of building elements

Where a deemed-to-satisfy provision requires a building element to have an FRL, it must be determined in accordance with Specification A2.3.

A2.4 Early Fire Hazard Indices

Where a deemed-to-satisfy provision requires a building component or assembly to have an Early Fire Hazard Index, it must be determined in accordance with Specification A2.4.

ACT A2.101 to A2.103

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PART A3 CLASSIFICATION OF BUILDINGS AND STRUCTURES

A3.1 Principles of classification

The classification of a building or part of a building is determined by the purpose for which it is designed, constructed or adapted to be used.

A3.2 Classifications

Buildings are classified as follows:

Class 1: one or more buildings which in association constitute-

- (a) **Class 1a** - a single dwelling being-
 - (i) a detached house; or
 - (ii) one or more attached dwellings, each being a building, separated by a *fire-resisting* wall, including a row house, terrace house, town house or villa unit; or
- (b) **Class 1b** - a boarding house, guest house, hostel or the like with a total *floor area* not exceeding 300 m² and in which not more than 12 persons would ordinarily be resident,

which is not located above or below another dwelling or another Class of building other than a *private garage*.

Class 2: a building containing 2 or more *sole-occupancy units* each being a separate dwelling.

Class 3: a residential building, other than a building of Class 1 or 2, which is a common place of long term or transient living for a number of unrelated persons, including-

- (a) a boarding-house, guest house, hostel, lodging-house or backpackers accommodation; or
- (b) a residential part of an hotel or motel; or
- (c) a residential part of a *school*; or
- (d) accommodation for the aged, disabled or children; or
- (e) a residential part of a *health-care building* which accommodates members of staff.

Qld A3.2(f)

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Class 4: a dwelling in a building that is Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building.

Class 5: an office building used for professional or commercial purposes, excluding buildings of Class 6, 7, 8, or 9.

Class 6: a shop or other building for the sale of goods by retail or the supply of services direct to the public, including-

- (a) an eating room, cafe, restaurant, milk or soft-drink bar; or
- (b) a dining room, bar, shop or kiosk part of a hotel or motel; or
- (c) a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or
- (d) market or sale room, showroom, or *service station*.

Class 7: a building which is-

- (a) a *carpark*; or
- (b) for storage, or display of goods or produce for sale by wholesale.

Class 8: a laboratory, or a building in which a handicraft or process for the production, assembling, altering, repairing, packing, finishing, or cleaning of goods or produce is carried on for trade, sale, or gain.

Class 9: a building of a public nature-

- (a) **Class 9a** - a *health-care* building; including those parts of the building set aside as a laboratory; or
- (b) **Class 9b** - an *assembly building*, including a trade workshop, laboratory or the like in a primary or secondary *school*, but excluding any other parts of the building that are of another Class.

Class 10: a non-habitable building or structure-

- (a) **Class 10a** - a non-habitable building being a *private garage*, carport, shed, or the like; or
- (b) **Class 10b** - a structure being a fence, mast, antenna, retaining or free-standing wall, *swimming pool*, or the like.

A3.3 Multiple classification

Each part of a building must be classified separately, and-

- (a) where parts have different purposes - if not more than 10% of the *floor area* of a *storey* which is not a laboratory is used for a purpose which is a different classification, the classification applying to the major use may apply to the whole *storey*; and
- (b) Classes 1a, 1b, 9a, 9b, 10a and 10b are separate classifications; and
- (c) a reference to-
 - (i) Class 1 - is to Class 1a and 1b
 - (ii) Class 9 - is to Class 9a and 9b; and
 - (iii) Class 10 - is to Class 10a and 10b.
- (d) A plant room, machinery room, lift motor room, boiler room or the like must have the same classification as the part of the building in which it is situated.

PART A4 UNITED BUILDINGS

A4.1 When buildings are united

Two or more buildings adjoining each other form one united building if they-

- (a) are connected through openings in the walls dividing them; and
- (b) together comply with all the requirements of the BCA as though they are a single building.

A4.2 Alterations in a united building

If, after *alterations* or any other building work, two or more of the buildings in A4.1 cease to be connected through openings in the dividing walls, each of those buildings not now connected must comply with all requirements for a single building.

SPECIFICATION **A1.3** STANDARDS ADOPTED BY REFERENCE

ACT, NSW, NT,
QLD, SA, Tas, Vic
Spec A1.3 Table 1

1. Schedule of referenced documents

The Standards and other documents listed in Table 1 are referred to in the BCA.

Table 1: SCHEDULE OF REFERENCED DOCUMENTS			
No.	Date	Title	BCA Clause(s)
AS 1038		Coal and coke-Analysis and testing	
Part 15	1995	Fusibility of higher rank coal ash and coke ash	Spec C3.15
AS 1170		Minimum design loads on structures (SAA Loading Code)	
Part 1	1989	Dead and live loads and load combinations Amdt 1, Jan 1993	B1.2
Part 2	1989	Wind loads Amdt 1, Jan. 1991 Amdt 2, Jan 1993 Amdt 3, Dec 1993	B1.2
Part 3	1990	Snow loads	B1.2
Part 4	1993	Earthquake loads Amdt 1, Sept 1994	B1.2
AS 1191	1985	Acoustics- Method for laboratory measurement of airborne sound transmission loss of building partitions Amdt 1, Jan 1987	Spec F5.5
AS/NZS 1200	1994	Pressure equipment	G2.2
AS 1250	1981	The use of steel in structures (SAA Steel Structures Code) Amdt 2, Oct. 1984	Spec A2.3, B1.3
AS 1276	1979	Methods for determination of Sound Transmission Class and Noise Isolation Class of building partitions	F5.2
AS 1288	1994	Glass in buildings - Selection and Installation	B1.3, Spec C3.4, C2.5
AS 1428		Design for access and mobility	
Part 1	1993	General requirements for access-Buildings Amdt 1, Oct 1993	D3.2, D3.3, D3.6, D3.7, F2.4

Continued

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Table 1 continued

AS 1530		Methods for fire tests on building materials components and structures	
Part 1	1994	Combustibility test for materials	A1.1
Part 2	1993	Test for flammability of materials Amdt 1, July 1993	A1.1
Part 3	1989	Simultaneous determination of ignitability, flame propagation, heat release and smoke release Amdt 1, April 1992	Spec A2.4
Part 4	1990	Fire-resistance tests on elements of building construction	C 3.15, C3.16, Spec A2.4, Spec C3.15
		[Note: Subject to the note to AS 4072.1, reports relating to tests carried out under earlier editions of AS 1530 Parts 1 to 4 remain valid. Reports relating to tests carried out after the date of an amendment to a Standard must relate to the amended Standard]	
AS 1538	1988	Cold-formed Steel Structures Code	B1.3
AS 1562		Design and installation of sheet roof and wall cladding	
Part 1	1992	Metal Amdt 1, July 1993 Amdt 2, Sept 1995	B1.3, F1.5
AS 1603		Automatic fire detection and alarm systems	
Part 4	1987	Control and indicating equipment	Spec E2.2a
AS 1639	1990	The design and installation of corrugated fibre-reinforced cement roofing and wall cladding Amdt 1, May 1991	F1.5
AS 1657	1992	Fixed platforms, walkways, stairways and ladders - Design, construction and installation (SAA Code for Fixed Platforms, Walkways, Stairways and Ladders)	D1.16, D2.18, H1.6
AS 1664	1979	Rules for the use of aluminium in structures (SAA Aluminium Structures Code)	B1.3

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Table 1 continued			
AS 1668		The use of mechanical ventilation and air-conditioning in buildings	
Part 1	1991	Fire and smoke control	C2.5, C2.12, C3.15, D1.7, E2.2, F4.12, Spec E1.8, Spec E2.2a, Spec G3.8
Part 2	1991	Mechanical ventilation for acceptable indoor-air quality	F4.5, F4.11, F4.12
AS 1670	1995	Automatic fire detection and alarm systems - system design, installation and commissioning	C2.3, C3.5, C3.6, C3.7, C3.8, C3.11, G4.8 Spec C3.4, Spec E2.2a, Spec G3.8, Spec E1.5
AS 1680		Interior lighting	F4.4
Part 1	1990	General principles and recommendations Amdt 1, June 1993	
Part 2.0	1990	Recommendations for specific tasks and interiors Amdt 1, Dec 1992	
Part 2.1	1993	Circulation space and other general areas	
Part 2.2	1994	Office and screen based tasks	
Part 2.3	1994	Educational and training facilities	
AS 1684	1992	National Timber Framing Code Amdt 1, Sept 1993 Amdt 2, June 1994 Amdt 3, Dec 1995	B1.3
AS 1691	1985	Domestic oil-fired appliances - Installation Amdt 1, Sept 1985	G2.2
AS 1720		Timber structures (SAA Timber Structures Code)	
Part 1	1988	Design methods Amdt 1, March 1993	B1.3
Part 4	1990	Fire resistance of structural timber	Spec A2.3
AS 1735		Lifts, escalators and moving walks (SAA Lift Code)	
Part 2	1993	Passenger and goods lifts - Electric Amdt 1, Oct 1995	D1.16, E3.4, E3.5, Spec C1.8
Part 11	1986	Fire-rated landing doors	C3.10
Part 12	1986	Facilities for persons with disabilities	E3.6, D3.3

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Table 1 continued

AS 1860	1991	Installation of particleboard flooring	B1.3
AS 1905		Components for the protection of openings in fire-resistant walls (SAA Fire Door Code)	
Part 1	1990	Fire-resistant doorsets	C3.6, Spec C3.4
Part 2	1989	Fire-resistant roller shutters	Spec C3.4
AS 1926		Swimming pool safety	G1.1
Part 1	1993	Fencing for swimming pools	
Part 2	1995	Location of fencing for private swimming pools	
AS 2049	1992	Roof tiles	B1.3, F1.5
AS 2050	1995	Fixing of roofing tiles Amdt 1, Sept 1995	B1.3, F1.5
AS 2107	1987	Acoustics-Recommended design sound levels and reverberation times for building interiors	Spec E1.8
AS 2118		Automatic fire sprinkler systems	Spec E1.5
Part 1	1995	Standard	
Part 4	1995	Residential	
Part 6	1995	Combined sprinkler and hydrant	
AS 2159	1995	Rules for the design and installation of piles (SAA Piling Code) Amdt 1, April 1996	B1.3
AS 2185	1991	Fibrous plaster products	Spec C1.1, Spec C1.8
AS 2220		Emergency warning and intercommunication systems in buildings	
Part 1	1989	Equipment design and manufacture Amdt 1, Nov 1989 Amdt 2, Aug 1993	E4.9, Spec G3.8
Part 2	1989	System design, installation and commissioning Amdt 1, Nov 1989 Amdt 2, Aug 1993	E4.9, Spec G3.8
AS 2293		Emergency evacuation lighting in buildings	
Part 1	1987	Design and installation Amdt 1, March 1988 Amdt 2, Oct 1992	E4.4, E4.8

Continued

Table 1 continued			
AS 2327		Composite construction in structural steel and concrete (SAA Composite Construction Code)	
Part 1	1980	Simply supported beams	Spec A2.3, B1.3
AS 2419		Fire hydrant installations	
Part 1	1994	System design, installation and commissioning Amdt 1, Sept 1996	E1.3
AS 2424	1991	Plastics building sheets- General installation requirements and design of roofing systems	B1.3, F1.5
AS 2441	1988	Installation of fire hose reels..	E1.4
AS 2444	1995	Portable fire extinguishers - Selection and location	E1.6
AS 2665	1983	Smoke/heat venting systems - Design installation and commissioning	Spec E2.2a, Spec G3.8,
AS 2867	1986	Farm structures - General requirements for structural design	B1.3
AS 2870		Residential slabs and footings	
Part 1	1996	Construction Amdt 1, Dec 1996	F1.10
AS 2890		Parking facilities	
Part 1	1993	Off-street car parking	D3.5
AS/NZS 2904	1995	Damp-proof courses and flashings	F1.9
AS 2908		Cellulose cement products	
Part 1	1992	Corrugated sheets	B1.3, F1.5
Part 2	1992	Flat sheets	A1.1
AS 2918	1990	Domestic solid-fuel burning appliances- Installation	G2.2
AS/NZS 3013	1995	Electrical installations - Wiring systems for specific applications	C2.13
AS 3600	1994	Concrete structures	Spec A2.3, B1.3
AS 3660		Protection of buildings from subterranean termites	
Part 1	1995	New buildings	B1.3, F1.9
AS/NZS 3666		Air-handling and water systems of buildings - Microbial control	
Part 1	1995	Design, installation and commissioning Amdt 1, April 1996	F2.7
Part 2	1995	Operation and maintenance Amdt 1, April 1996	F4.5, I1.2

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Table 1 continued			
AS 3700	1988	Masonry in Buildings (SAA Masonry Code) Amdt 1, Jan 1989 Amdt 2, March 1991 Amdt 3, April 1992 Amdt 4, July 1994	Spec A2.3, B1.3, F5.5
AS 3740	1994	Waterproofing of wet areas in residential buildings Amdt 1, Sept 1995	F1.7
AS 3786	1993	Smoke alarms Amdt 1, April 1994 Amdt 2, Dec 1995	Spec E2.2a
AS 3959	1991	Construction of buildings in bushfire prone areas	G5.2
AS 4072		Components for the protection of openings in fire-resistant separating elements	
Part 1	1992	Service penetrations and control joints [Note: Systems tested to AS 1530.4 prior 1 January 1995 need not be retested to comply with the provisions in AS 4072.1]	C3.15
AS 4100	1990	Steel Structures Amdt 1, Aug 1992 Amdt 2, June 1993 Amdt 3, Dec 1995	Spec A2.3, B1.3
AS/NZS 4200		Pliable building membranes and underlays	F1.6
Part 1	1994	Materials Amdt 1, Dec 1994	
Part 2	1994	Installation requirements	
AS 4254	1995	Ductwork for air-handling systems in buildings	Spec C1.10
AS/NZS 4256		Plastic roof and wall cladding material	B1.3, F1.5
Part 1	1994	General requirements	
Part 2	1994	Unplasticized polyvinyl chloride (uPVC) building sheets	
Part 3	1994	Glass fibre reinforced polyester (GRP)	
Part 5	1996	Polycarbonate	
AISC		Guidelines for assessment of fire resistance of structural steel members	Spec A2.3
ASTM D3018-90		Class A asphalt shingles surfaced with mineral granules	B1.3, F1.5

Continued

Table 1 continued

ASTM E72-80		Standard method of conducting strength tests of panels for building construction	Spec C1.8
ASTM E695-79	1985	Standard method of measuring relative resistance of wall, floor and roof construction to impact loading	Spec C1.8
CSIRO-NBTC	1987	Bulletin 5- Earth-wall Construction 4th edition	B1.3
ISO 140		Acoustics- Measurement of sound insulation in buildings and of building elements	
Part VI	1978E	Laboratory measurements of impact sound insulation of floors	Spec F5.5
SSL		Register of Accredited Products - Fire Protection Equipment	A2.2

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SPECIFICATION **A2.3** FIRE-RESISTANCE OF BUILDING ELEMENTS

1. Scope

This Specification sets out the procedures for determining the FRL of building elements.

2. Rating

A building element meets the requirements of this Specification if-

- (a) it is listed in, and complies with Table 1 of this Specification; or
- (b) it is identical with a prototype that has been submitted to the *Standard Fire Test*, or an equivalent or more severe test, and the FRL achieved by the prototype is confirmed in a report from a *Registered Testing Authority* which-
 - (i) describes the method and condition of test and the form of construction of the tested prototype in full; and
 - (ii) certifies that the application of restraint to the prototype complied with the *Standard Fire Test*, or
- (c) it differs in only a minor degree from a prototype tested under (b) and the FRL attributed to the building element is confirmed in a report from a *Registered Testing Authority* which-
 - (i) certifies that the building element is capable of achieving the FRL despite the minor departures from the tested prototype; and
 - (ii) describes the materials, construction and conditions of restraint which are necessary to achieve the FRL; or
- (d) it is designed to achieve the FRL in accordance with-
 - (i) AS 1250, AS 2327, AS 4100 and AISC Guidelines for Assessment of Fire Resistance of Structural Steel Members if it is a steel or composite structure; or
 - (ii) AS 3600 if it is a concrete structure; or
 - (iii) AS 1720.4 if it is a solid or glued-laminated timber structure; or
 - (iv) AS 3700 if it is a masonry structure; or

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- (e) the FRL is determined by calculation based on the performance of a prototype in the *Standard Fire Test* and confirmed in a report in accordance with Clause 3.

3. FRLs determined by calculation

If the FRL of a building element is determined by calculation based on a tested prototype-

- (a) the building element may vary from the prototype in relation to-
- (i) length and height if it is a wall; and
 - (ii) height if it is a column; and
 - (iii) span if it is a floor, roof or beam; and
 - (iv) conditions of support; and
 - (v) to a minor degree, cross-section and components.
- (b) the report must demonstrate by calculation that the building element would achieve the FRL if it is subjected to the regime of the *Standard Fire Test* in relation to-
- (i) *structural adequacy* (including deflection); and
 - (ii) *integrity*; and
 - (iii) *insulation*; and
- (c) the calculations must take into account-
- (i) the temperature reached by the components of the prototype and their effects on strength and modulus of elasticity; and
 - (ii) appropriate features of the building element such as support, restraint, cross-sectional shape, length, height, span, slenderness ratio, reinforcement, ratio of surface area to mass per unit length, and fire protection; and
 - (iii) features of the prototype that influenced its performance in the *Standard Fire Test* although these features may not have been taken into account in the design for dead and live load; and
 - (iv) features of the conditions of test, the manner of support and the position of the prototype during the test, that might not be reproduced in the building element if it is exposed to fire; and
 - (v) the design load of the building element in comparison with the tested prototype.

4. Interchangeable materials

- (a) Concrete and plaster - An FRL achieved with any material of Group A, B, C, D or E as an ingredient in concrete or plaster, applies equally when any other material of the same group is used in the same proportions:

Group A: Any portland cement.

Group B: Any lime.

Group C: Any dense sand.

Group D: Any dense calcareous aggregate, including any limestone or any calcareous gravel.

Group E: Any dense siliceous aggregate, including any basalt, diorite, dolerite, granite, granodiorite or trachyte.

- (b) Perlite and vermiculite - An FRL achieved with either gypsum-perlite plaster or gypsum-vermiculite plaster applies equally for each plaster.

5. Columns covered with lightweight construction

If the *fire-resisting* covering of a steel column is *lightweight construction*, the construction must comply with C1.8 and C3.17.

6. Non-loadbearing elements

If a *non-loadbearing* element is able to be used for a purpose where the deemed-to-satisfy provisions prescribe an FRL for *structural adequacy, integrity* and *insulation*, that *non-loadbearing* element need not comply with the *structural adequacy* criteria.

Table 1 FRLs DEEMED TO BE ACHIEVED BY CERTAIN BUILDING ELEMENT						
Building element	Minimum thickness (mm) of principal material for FRL's					Annexure reference
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240	Clause No
WALL						
Masonry						
Ashlar	-	-	-	-	300	1,2,5,6
Calcium silicate	see 2(d)(iv) of this Specification					
Concrete	see 2(d)(iv) of this Specification					
Fired clay (inc terracotta)	see 2(d)(iv) of this Specification					
Concrete						
No-fines	-	-	-	150	170	1,5,6
Prestressed	see 2(d)(ii) of this Specification					
Reinforced	see 2(d)(ii) of this Specification					
Plain	-	-	-	150	170	1,5,6
Solid gypsum blocks	75	90	100	110	125	1,5,6
Gypsum-perlite or Gypsum vermiculite-plaster on metal lath and channel (non-loadbearing walls only)	50	50	65	-	-	1,5,7
CONCRETE COLUMN						
Prestressed	see 2(d)(ii) of this Specification					
Reinforced	see 2(d)(ii) of this Specification					
HOT-ROLLED STEEL COLUMN						
(inc a fabricated column) exposed on no more than 3 sides:						8
Fire protection of						
Concrete - Cast in-situ-						
<i>loadbearing</i>	25	30	40	55	75	9,11,12
<i>non-loadbearing</i>						
unplastered	25	30	40	50	65	9,11,12
plastered 13 mm-	25	25	30	40	50	1,6,9,11,12
Gypsum - Cast in-situ	-	-	-	-	50	9,11,12
Gypsum-perlite or Gypsum-vermiculite plaster						
sprayed to contour	20	25	35	50	55	1,11
sprayed on metal lath	20	20	25	35	45	1,7
						Continued

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Table 1 continued													
Building element	Minimum thickness (mm) of principal material for FRL's					Annexure reference							
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240	Clause No							
HOT-ROLLED STEEL COLUMN													
(inc a fabricated column) exposed on no more than 3 sides and with column spaces filled:													
Fire protection of -						8,9							
Solid calcium-silicate masonry	50	50	50	50	65	1,3,11,12							
Solid clay masonry	50	50	50	65	90	1,3,11,12							
Solid concrete masonry	50	50	50	65	90	1,3,11,12							
Solid gypsum blocks	50	50	50	50	65	1,3,11,12							
Hollow terracotta blocks plastered 13 mm	50	50	50	65	90	1,3,6,10,11,12							
HOT-ROLLED STEEL COLUMN													
(inc. a fabricated column) exposed on no more than 3 sides and with column spaces unfilled:													
Fire protection of -						8							
Solid calcium- silicate masonry	50	50	50	-	-	1,3,11,12							
Solid clay masonry	50	50	65	-	-	1,3,11,12							
Solid concrete masonry	50	50	65	-	-	1,3,11,12							
Solid gypsum blocks	50	50	50	-	-	1,3,11,12							
Hollow terracotta blocks- plastered 13 mm	50	50	65	-	-	1,3,6,10,11,12							
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 11%; text-align: center;">60/-/-</td> <td style="width: 11%; text-align: center;">90/-/-</td> <td style="width: 11%; text-align: center;">120/-/-</td> <td style="width: 11%; text-align: center;">180/-/-</td> <td style="width: 11%; text-align: center;">240/-/-</td> <td colspan="2"></td> </tr> </table>							60/-/-	90/-/-	120/-/-	180/-/-	240/-/-		
60/-/-	90/-/-	120/-/-	180/-/-	240/-/-									
HOT-ROLLED STEEL COLUMN													
(inc a fabricated column) exposed on 4 sides:													
Fire protection of -						8							
Concrete - Cast in- situ- loadbearing	25	40	45	65	90	9,11,12							
non-loadbearing- unplastered	25	30	40	50	65	9,11,12							
plastered 13 mm	25	25	30	40	50	1,6,9,11,12							
Gypsum - Cast in-situ	-	-	-	-	50	9,11,12							
						Continued							

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Table 1 continued						
Building element	Minimum thickness (mm) of principal material for FRL's					Annexure reference
	60/-/-	90/-/-	120/-/-	180/-/-	240/-/-	Clause No
HOT-ROLLED STEEL COLUMN continued (inc a fabricated column) exposed on 4 sides:						
Gypsum-perlite or Gypsum-vermiculite plaster						
sprayed to contour	25	30	40	55	65	1,11
sprayed on metal lath	20	20	30	40	50	1,7
HOT-ROLLED STEEL COLUMN (inc. a fabricated column) exposed on 4 sides and with column spaces filled						
Fire protection of -						8,9
Solid calcium- silicate masonry	50	50	50	65	75	1,3,11,12,
Solid clay masonry	50	50	50	75	100	1,3,11,12
Solid concrete masonry	50	50	50	75	100	1,3,11,12
Solid gypsum blocks	50	50	50	65	75	1,3,11,12
Hollow terracotta blocks-						
plastered 13 mm	50	50	50	75	100	1,3,6,10,11, 12
HOT-ROLLED STEEL COLUMN (inc. a fabricated column) exposed on 4 sides and with column spaces unfilled						
Fire protection of -						8
Solid calcium-silicate masonry	50	50	50	-	-	1,3,11,12
Solid clay masonry	50	50	65	-	-	1,3,11,12
Solid concrete masonry	50	50	65	-	-	1,3,11,12
Solid gypsum blocks	50	50	50	-	-	1,3,11,12
Hollow terracotta blocks-						
plastered 13 mm	50	50	65	-	-	1,3,6,10,11, 12
Continued						

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Table 1 continued						
Building element	Minimum thickness (mm) of principal material for FRL's					Annexure reference
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240	Clause No
BEAM						
Concrete						
Prestressed	see 2(d)(ii) of this Specification					
Reinforced	see 2(d)(ii) of this Specification					
Hot-rolled Steel (inc. an open-web joist girder truss etc) exposed on no more than 3 sides:						8
Fire protection of -						
Concrete- Cast in-situ	25	30	40	50	65	11,12
Gypsum-perlite or Gypsum-vermiculite plaster						
sprayed to contour	20	25	35	50	55	1,11
sprayed on metal lath	20	20	25	35	45	1,7
	60/-/-	90/-/-	120/-/-	180/-/-	240/-/-	
Hot-rolled Steel (inc. an open-web joist girder truss etc) exposed on 4 sides:						8
Fire protection of -						
Concrete- Cast in-situ	25	40	45	65	90	11,12
Gypsum-perlite or Gypsum-vermiculite plaster-						
sprayed to contour	25	30	40	55	65	1,11
sprayed on metal lath	20	20	30	40	50	1,7
	60/60/60	90/90/90	120/120/120	180/180/180	240/240/240	
FLOOR, ROOF OR CEILING						
Concrete -						
Prestressed	see 2(d)(ii) of this Specification					
Reinforced	see 2(d)(ii) of this Specification					

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ANNEXURE TO TABLE 1

1 MORTAR, PLASTER AND PLASTER REINFORCEMENT**1.1 Mortar for masonry**

Masonry units of ashlar, calcium silicate, concrete or fired clay (including terracotta blocks) must be laid in cement mortar or composition mortar complying with the relevant provisions of AS 3700.

1.2 Gypsum blocks

Gypsum blocks must be laid in gypsum-sand mortar or lime mortar.

1.3 Gypsum-sand mortar and plaster

Gypsum-sand mortar and gypsum-sand plaster must consist of either-

- (a) not more than 3 parts by volume of sand to 1 part by volume of gypsum; or
- (b) if lime putty is added, not more than 2.5 parts by volume of sand to 1 part by volume of gypsum and not more than 5% of lime putty by volume of the mixed ingredients.

1.4 Gypsum-perlite and gypsum-vermiculite plaster

Gypsum-perlite or gypsum-vermiculite plaster must be applied-

- (a) in either one or 2 coats each in the proportions of 1 m³ of perlite or vermiculite to 640 kg of gypsum if the *required* thickness of the plaster is not more than 25 mm; and
- (b) in 2 coats if the *required* thickness is more than 25 mm, the first in the proportions of 1 m³ of perlite or vermiculite to 800 kg of gypsum and the second in the proportions of 1 m³ of perlite or vermiculite to 530 kg of gypsum.

1.5 Plaster of cement and sand or cement, lime and sand

Plaster prescribed in Table 1 must consist of-

- (a) cement and sand or cement, lime and sand; and
- (b) may be finished with gypsum, gypsum-sand, gypsum-perlite or gypsum-vermiculite plaster or with lime putty.

ANNEXURE TO TABLE 1 continued**1.6 Plaster reinforcement**

If plaster used as fire protection on walls is more than 19 mm thick-

- (a) it must be reinforced with expanded metal lath that-
 - (i) has a mass per unit area of not less than 1.84 kg/m²; and
 - (ii) has not fewer than 98 meshes per metre; and
 - (iii) is protected against corrosion by galvanising or other suitable method; or
- (b) it must be reinforced with 13 mm x 13 mm x 0.7 mm galvanised steel wire mesh, and

with the reinforcement must be securely fixed at a distance from the face of the wall of not less than 1/3 of the total thickness of the plaster.

2 ASHLAR STONE MASONRY

Ashlar masonry must not be used in a part of the building containing more than 2 *storeys*, and must not be of-

- (a) aplite, granite, granodiorite, quartz dacite, quartz diorite, quartz porphyrite or quartz porphyry; or
- (b) conglomerate, quartzite or sandstone; or
- (c) chert or flint; or
- (d) limestone or marble.

3 DIMENSIONS OF MASONRY

The thicknesses of masonry of calcium-silicate, concrete and fired clay are calculated as follows:

3.1 Solid units

For masonry in which the amount of perforation or coring of the units does not exceed 25% by volume (based on the overall rectangular shape of the unit) the thickness of the wall must be calculated from the manufacturing dimensions of the units and the specified thickness of the joints between them as appropriate.

ANNEXURE TO TABLE 1 continued**3.2 Hollow units**

For masonry in which the amount of perforation or coring of the units exceeds 25% by volume (based on the overall rectangular shape of the unit) the thickness of the wall must be calculated from the equivalent thicknesses of the units and the specified thickness of the joints between them as appropriate.

3.3 Equivalent thickness

The equivalent thickness of a masonry unit is calculated by dividing the net volume by the area of one vertical face.

4 * * * * *

This Clause has deliberately been left blank.

5 HEIGHT-TO-THICKNESS RATIO OF CERTAIN WALLS

The ratio of height between lateral supports to overall thickness of a wall of ashlar, no-fines concrete, unreinforced concrete, solid gypsum blocks, gypsum-perlite or gypsum-vermiculite plaster on metal lath and channel, must not exceed-

- (a) 20 for a *loadbearing* wall; or
- (b) 27 for a *non-loadbearing* wall.

6 INCREASE IN THICKNESS BY PLASTERING**6.1 Walls**

If a wall of ashlar, solid gypsum blocks or concrete is plastered on both sides to an equal thickness, the thickness of the wall for the purposes of Table 1 (but not for the purposes of Annexure Clause 5) may be increased by the thickness of the plaster on one side.

6.2 Columns

Where Table 1 indicates that column-protection is to be plastered, the tabulated thicknesses are those of the principal material. They do not include the thickness of plaster which must be additional to the listed thicknesses of the material to which it is applied.

ANNEXURE TO TABLE 1 continued**7 GYPSUM-PERLITE OR GYPSUM-VERMICULITE PLASTER ON METAL LATH****7.1 Walls**

In walls fabricated of gypsum-perlite or gypsum-vermiculite plaster on metal lath and channel-

- (a) the lath must be securely wired to each side of 19 mm x 0.44 kg/m steel channels (used as studs) spaced at not more than 400 mm centres; and
- (b) the gypsum-perlite or gypsum-vermiculite plaster must be applied symmetrically to each exposed side of the lath.

7.2 Columns

For the fire protection of steel columns with gypsum-perlite or gypsum-vermiculite on metal lath-

- (a) the lath must be fixed at not more than 600 mm centres vertically to steel furring channels, and-
 - (i) if the plaster is to be 35 mm thick or more - at least 12 mm clear of the column; or
 - (ii) if the plaster is to be less than 35 mm thick - at least 6 mm clear of the column; or
- (b) the plaster may be applied to self-furring lath with furring dimples to hold it not less than 10 mm clear of the column, and

the thickness of the plaster must be measured from the back of the lath.

7.3 Beams

For the fire protection of steel beams with gypsum-perlite or gypsum-vermiculite on metal lath-

- (a) the lath must be fixed at not more than 600 mm centres to steel furring channels and at least 20 mm clear of the steel; and
- (b) the thickness of the plaster must be measured from the back of the lath.

ANNEXURE TO TABLE 1 continued

8 EXPOSURE OF COLUMNS AND BEAMS**8.1 Columns**

A column incorporated in or in contact on one or more sides with a wall of solid masonry or concrete at least 100 mm thick may be considered to be exposed to fire on no more than 3 sides.

8.2 Beams

A beam, open-web joist, girder or truss in direct and continuous contact with a concrete slab or a hollow block floor or roof may be considered to be exposed to fire on no more than 3 sides.

9 FILLING OF COLUMN SPACES

- (a) The spaces between the fire-protective material and the steel (and any re-entrant parts of the column itself) must be filled solid with a fire-protective material like concrete, gypsum or grout.
- (b) The insides of hollow sections, including pipes, need not be filled.

10 HOLLOW TERRACOTTA BLOCKS

The proportion of cored holes or perforations in a hollow terracotta block (based on the overall rectangular volume of the unit) must not exceed the following:

- (a) For blocks up to 75 mm thick 35%
- (b) For blocks more than 75 mm but not more than 100 mm thick 40%
- (c) For blocks more than 100 mm 50%

11 REINFORCEMENT FOR COLUMN AND BEAM PROTECTION**11.1 Masonry**

Masonry of calcium-silicate, fired clay and concrete for the protection of steel columns must have steel-wire or mesh reinforcement in every second course and lapped at the corners.

ANNEXURE TO TABLE 1 continued**11.2 Gypsum blocks and hollow terracotta blocks**

Gypsum blocks and hollow terracotta blocks for the protection of steel columns must have steel-wire or mesh reinforcement in every course and lapped at corners.

11.3 Structural concrete and poured gypsum

If a steel column or a steel beam is to be protected with structural concrete or poured gypsum-

- (a) the concrete or gypsum must be reinforced with steel-wire mesh or steel-wire binding placed about 20 mm from its outer surface, and-
 - (i) for concrete or gypsum less than 50 mm thick, the steel wire must be-
 - (A) at least 3.15 mm in diameter; and
 - (B) spaced at not more than 100 mm vertically; or
 - (ii) for concrete or gypsum not less than 50 mm thick, the steel wire must be either-
 - (A) of a diameter and spacing in accordance with (i); or
 - (B) at least 5 mm in diameter and spaced at not more than 150 mm vertically.

11.4 Gypsum-perlite or gypsum-vermiculite plaster sprayed to contour

- (a) If a steel column or steel beam is protected with either gypsum-perlite or gypsum-vermiculite plaster sprayed to contour and the construction falls within the limits of Table 11.4, the plaster must be reinforced with-
 - (i) expanded metal lath complying with Clause 1.6 of this Annexure; or
 - (ii) galvanised steel wire mesh complying with Clause 1.6 of this Annexure.
- (b) The reinforcement must be placed at a distance from the face of the plaster of at least 1/3 of the thickness of the plaster and must be securely fixed to the column or beam at intervals of not more than the relevant listing in Table 11.4.

ANNEXURE TO TABLE 1 continued

- (c) For the purposes of Table 11.4-
- (i) "vertical" includes a surface at not more than 10° to the vertical; and
 - (ii) "horizontal" includes a surface at not more than 10° to the horizontal; and
 - (iii) "underside" means the underside of any horizontal or non-vertical surface.

Table 11.4 REINFORCEMENT OF GYPSUM-PERLITE OR GYPSUM-VERMICULITE PLASTER SPRAYED TO CONTOUR		
Surface to be protected	Reinforcement required if smaller dimension of surface exceeds (mm)	Max spacing of fixings of the mesh to surface (mm)
Members with H or I cross-section:		
Vertical-	450	450
Non-vertical-	300	300
Underside-	300	300
Upper side of a horizontal surface-	Not required	
Members with other shapes:		
Vertical-	Any size	450
Non-vertical-	Any size	300
Underside-	Any size	300
Upper side of a horizontal surface-	Not required	

12 THICKNESS OF COLUMN AND BEAM PROTECTION

12.1 Measurement of thickness

The thickness of the fire protection to steel columns and steel beams (other than fire protection of gypsum-perlite or gypsum-vermiculite plaster sprayed on metal lath or sprayed to contour) is to be measured from the face or edge of the steel, from the face of a splice plate or from the outer part of a rivet or bolt, whichever is the closest to the outside of the fire-protective construction, except that-

- (a) if the thickness of the fire protection is 40 mm or more, rivet heads may be disregarded; and

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- (b) if the thickness of the fire protection is 50 mm or more-
 - (i) any part of a bolt (other than a high-tensile bolt) may be disregarded; and
 - (ii) a column splice plate within 900 mm of the floor may encroach upon the fire protection by up to a 1/4 of the thickness of the fire protection; and
- (c) the flange of a column or beam may encroach by up to 12 mm upon the thickness of the fire protection at right angles to the web if-
 - (i) the column or beam is intended to have an FRL of 240/240/240 or 240/-/-; and
 - (ii) the flange projects 65 mm or more from the web; and
 - (iii) the thickness of the edge of the flange (inclusive of any splice plate) is not more than 40 mm.

SPECIFICATION A2.4 EARLY FIRE HAZARD TEST FOR ASSEMBLIES

1. Scope

This Specification sets out the procedures for determining the Early Fire Hazard Indices of components and assemblies and their ability to screen their core materials as *required* under Specification C1.10.

2. Form of test

Tests must be carried out in accordance with-

- (a) for the determination of the *Spread-of-Flame Index* and *Smoke-Developed Index* - AS 1530.3; and
- (b) for the determination of the ability to prevent ignition and to screen its core material from free air - AS 1530.4.

3. Test specimens

Test specimens must incorporate-

- (a) all types of joints; and
- (b) all types of perforations, recesses or the like for pipes, light switches or other fittings, which are proposed to be used for the member or assembly of members in the building.

4. Concession

Clause 3 does not apply to joints, perforations, recesses or the like that are larger than those in the proposed application and have already been tested in the particular form of construction concerned and found to comply with the conditions of test.

5. Smaller specimen permitted

A testing laboratory may carry out the test specified in Clause 2(b) at pilot scale if a specimen (which must be not less than 900 mm x 900 mm) will adequately represent the proposed construction in the building, but the results of that test do not apply to construction larger than limits defined by the laboratory conducting the pilot examination.

SECTION **B**

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STRUCTURE

B1 Structural Provisions

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PART B1 STRUCTURAL PROVISIONS**OBJECTIVE**

- BO1** The objective of this Part is to-
- (a) safeguard people from injury caused by structural failure; and
 - (b) safeguard people from loss of amenity caused by structural behaviour; and
 - (c) protect *other property* from physical damage caused by structural failure.

FUNCTIONAL STATEMENT

- BF1.1** A building or structure is to withstand the combination of loads and other actions to which it may be reasonably subjected.

PERFORMANCE REQUIREMENT

- BP1.1** A building or structure including its materials and components must be capable of sustaining at an acceptable level of safety and serviceability -
- (a) the most adverse combination of loads (including combinations of loads that might result in a potential for progressive collapse); and
 - (b) other actions,
to which it may reasonably be subjected.

PART **B1** STRUCTURAL PROVISIONS

Deemed-to-Satisfy Provisions

B1.0 Deemed-to-Satisfy Provisions

Performance Requirement BP1.1 is satisfied by complying with B1.1 to B1.3.

B1.1 * * * * *

This clause has deliberately been left blank.

B1.2 Loads

The building or structure must resist loads determined in accordance with the following:

- NT B1.2(b)
- (a) Dead and live loads and load combinations: AS 1170.1.
 - (b) Wind loads: AS 1170.2.
 - (c) Snow loads: AS 1170.3.
 - (d) Earthquake loads: AS 1170.4.

B1.3 Materials and forms of construction

Materials and forms of construction must comply with the following:

- (a) Masonry (including masonry-veneer, unreinforced masonry and reinforced masonry): AS 3700.
- (b) Concrete construction (including reinforced and prestressed concrete): AS 3600.
- (c) Steel construction-
 - (i) Steel structures: AS 1250 or AS 4100 except that where AS 1250 is used the following limitations apply:
 - (A) Steel must have a specified yield stress not greater than 350 MPa.
 - (B) Hot rolled steel sections and flat plate must not be more than 40 mm thick.
 - (C) Buildings must not have an *effective height* greater than 40 m.

<i>Deemed-to-Satisfy Provisions</i>	
<p>(D) Beam elements must not be greater than 20 m in length.</p> <p>(ii) Cold-formed steel structures: AS 1538.</p> <p>(d) Composite steel and concrete: AS 2327.1 .</p> <p>(e) Aluminium construction: AS 1664.</p> <p>(f) Timber construction-</p> <p>(i) Design of timber structures: AS 1720.1 .</p> <p>(ii) Timber structures not subject to snow loads: AS 1684.</p> <p>(g) Piling: AS 2159.</p> <p>(h) Glass installations: AS 1288.</p> <p>(i) Protection from termites: Where a <i>structural member</i> is subject to attack by subterranean termites: AS 3660.1, and-</p> <p>(i) for the purposes of this provision, a <i>structural member</i> consisting entirely of, or a combination of, any of the following materials is considered not subject to termite attack:</p> <p>(A) Steel.</p> <p>(B) Concrete.</p> <p>(C) Masonry.</p> <p>(D) Fibre-reinforced cement.</p> <p>(E) Timber - naturally termite resistant in accordance with Appendix A of AS 3660.1 .</p> <p>(F) Timber - preservative treated in accordance with Appendix B of AS 3660.1; and</p> <p>(ii) a durable notice must be permanently fixed to the building in a prominent location, such as a meter box or the like, indicating-</p> <p>(A) the method of protection; and</p> <p>(B) the date of installation of the system; and</p> <p>(C) where a chemical barrier is used, its life expectancy as listed on the National Registration Authority label; and</p> <p>(D) the installer's or manufacturer's recommendations for the scope and frequency of future inspections for termite activity.</p>	<p>Qld B1.3(f)(iii)</p> <p>NT B1.3(i)</p> <p>NSW B1.3(i)(ii)(D)</p>

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Deemed-to-Satisfy Provisions

- (j) Roof construction (except in cyclone areas):
 - (i) Extruded PVC and glass fibre-reinforced polyester (GRP) sheeting: AS 2424, AS/NZ 4256 Parts 1, 2, 3 and 5.
 - (ii) Roofing tiles: AS 2049, AS 2050.
 - (iii) Cellulose fibre-reinforced corrugated cement sheets: AS 2908.1 with safety mesh installed in accordance with AS 2424 Clause 2.3.3. for PVC and GRP sheeting.
 - (iv) Metal roofing: AS 1562.1.
 - (v) Asphalt shingles: ASTM D3018-90, Class A.
- (k) Particleboard structural flooring: AS 1860 (except for Clauses 5 and 6 and Table 1).
- (l) Earthwall construction: NBTC Bulletin 5, edition 4, Table 3.1 and Figure 3.7 and associated Table.
- (m) Structures for primary production purposes in rural areas: AS 2867

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SECTION **C**

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FIRE RESISTANCE

- C1 Fire Resistance and Stability**
- C2 Compartmentation and Separation**
- C3 Protection of Openings**

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SECTION C FIRE RESISTANCE

OBJECTIVE

- CO1** The objective of this Section is to-
- (a) safeguard people from illness or injury due to a fire in a building; and
 - (b) safeguard occupants from illness or injury while evacuating a building during a fire; and
 - (c) facilitate the activities of emergency services personnel; and
 - (d) avoid the spread of fire between buildings; and
 - (e) protect *other property* from physical damage caused by structural failure of a building as a result of fire.

FUNCTIONAL STATEMENTS

- CF1** A building is to be constructed to maintain structural stability during fire to-
- (a) allow occupants time to evacuate safely; and
 - (b) allow for *fire brigade* intervention; and
 - (c) avoid damage to *other property*.
- CF2** A building is to be provided with safeguards to prevent fire spread -
- (a) so that occupants have time to evacuate safely without being overcome by the effects of fire; and
 - (b) to allow for *fire brigade* intervention; and
 - (c) to *sole-occupancy units* providing sleeping accommodation; and

Application:

CF2(c) only applies to a Class 2 or 3 building or Class 4 part.

- (d) to adjoining *fire compartments*; and
- (e) between buildings.

PERFORMANCE REQUIREMENTS

- CP1** A building must have elements which will, to the degree necessary, maintain structural stability during a fire appropriate to-
- (a) the function or use of the building; and
 - (b) the *fire load*; and
 - (c) the potential *fire intensity*; and
 - (d) the *fire hazard*; and
 - (e) the height of the building; and
 - (f) its proximity to *other property*; and
 - (g) any active *fire safety systems* installed in the building; and
 - (h) the size of any *fire compartment*; and
 - (i) *fire brigade* intervention; and
 - (j) other elements they support.
- CP2** A building must have elements which will, to the degree necessary, avoid the spread of fire-
- (a) to *exits*; and
 - (b) to *sole-occupancy units and public corridors*; and

Application:

CP2(b) only applies to a Class 2 or 3 building or Class 4 part.

- (c) between buildings; and
 - (d) in a building,
- appropriate to-
- (i) the function or use of the building; and
 - (ii) the *fire load*; and
 - (iii) the potential *fire intensity*; and
 - (iv) the *fire hazard*; and
 - (v) the number of *storeys* in the building; and
 - (vi) its proximity to *other property*; and
 - (vii) any active *fire safety systems* installed in the building; and
 - (viii) the size of any *fire compartment*; and

- (ix) *fire brigade* intervention; and
- (x) other elements they support; and
- (xi) the *evacuation time*.

CP3 A *patient care area* of a Class 9a building must be protected from the spread of fire and smoke to allow sufficient time for the orderly evacuation of the building in an emergency.

CP4 A material and an assembly must resist the spread of fire to limit the generation of smoke and heat, and any toxic gases likely to be produced, to a degree appropriate to-

- (a) the *evacuation time*; and
- (b) the number, mobility and other characteristics of occupants; and
- (c) the function or use of the building; and
- (d) any active *fire safety systems* installed in the building.

CP5 A concrete *external wall* that could collapse as a complete panel (eg. tilt-up and pre-cast concrete) must be designed so that in the event of fire within the building the likelihood of outward collapse is avoided.

Limitation:
 CP5 does not apply to a building having more than two *storeys* above ground level.

CP6 A building must have elements, which will, to the degree necessary, avoid the spread of fire from service equipment having-

- (a) a high *fire hazard*; or
- (b) a potential for explosion resulting from a high *fire hazard*.

CP7 A building must have elements, which will, to the degree necessary, avoid the spread of fire so that emergency equipment provided in a building will continue to operate for a period of time necessary to ensure that the intended function of the equipment is maintained during a fire.

- CP8** Any building element provided to resist the spread of fire must be protected, to the degree necessary, so that an adequate level of performance is maintained-
- (a) where openings, construction joints and the like occur; and
 - (b) where penetrations occur for building services.
- CP9** Access must be provided to and around a building, to the degree necessary, for *fire brigade* vehicles and personnel to facilitate *fire brigade* intervention appropriate to-
- (a) the function or use of the building; and
 - (b) the *fire load*; and
 - (c) the potential *fire intensity*; and
 - (d) the *fire hazard*; and
 - (e) any active *fire safety systems* installed in the building; and
 - (f) the size of any *fire compartment*.

Tas CP10

VERIFICATION METHODS

- CV1** Compliance with CP2(c) to avoid the spread of fire between buildings on adjoining allotments is verified when it is calculated that-
- (a) a building will not cause heat flux in excess of those set out in column 2 of Table CV1 at locations within the boundaries of an adjoining property set out in column 1 of Table CV1 where another building may be constructed; and
 - (b) when located at the distances from the allotment boundary set out in column 1 of Table CV1, a building is capable of withstanding the heat flux set out in column 2 of Table CV1 without ignition.

Column 1 Location	Column 2 Heat Flux (kW/m ²)
On boundary	80
1 m from boundary	40
3 m from boundary	20
6 m from boundary	10

CV2 Compliance with CP2(c) to avoid the spread of fire between buildings on the same allotment is verified when it is calculated that a building-

- (a) is capable of withstanding the heat flux set out in column 2 of Table CV2 without ignition; and
- (b) will not cause heat flux in excess of those set out in column 2 of Table CV2,

when the distance between the buildings is as set out in column 1 of Table CV2.

Table CV2	
Column 1	Column 2
Distance between buildings	Heat Flux (kW/m²)
0 m	80
2 m	40
6 m	20
12 m	10

PART C1 FIRE RESISTANCE AND STABILITY

Amdt 0

Tas C1.0

Deemed-to-Satisfy Provisions

C1.0 Deemed-to-Satisfy Provisions

Performance Requirements CP1 to CP9 are satisfied by complying with-

- (a) C1.1 to C1.11, C2.1 to C2.14 and C3.1 to C3.17; and
- (b) in a building containing an *atrium*, Part G3; and
- (c) for theatres, *stages* and public halls, Part H1.

C1.1 Type of construction required

- (a) The minimum Type of *fire-resisting construction* of a building must be that specified in Table C1.1 and Specification C1.1, except as allowed for-
 - (i) certain Class 2 or 3 buildings in C1.5; and
 - (ii) Class 4 parts of buildings in C1.6; and
 - (iii) *open spectator stands* and indoor sports stadiums in C1.7; and
 - (iv) *lightweight construction* in C1.8.
- (b) Type A construction is the most fire-resistant and Type C the least fire-resistant of the Types of construction.

Table C1.1 TYPE OF CONSTRUCTION REQUIRED		
Rise in storeys	Class of building	
	2, 3, 9	5, 6, 7, 8
4 OR MORE	A	A
3	A	B
2	B	C
1	C	C

C1.2 Calculation of rise in storeys

- (a) The *rise in storeys* is the greatest number of *storeys* at any part of the *external walls* of the building-
 - (i) above the finished ground next to that part; or

Deemed-to-Satisfy Provisions

- (ii) if part of the *external wall* is on the boundary of the allotment, above the natural ground level at the relevant part of the boundary.
- (b) A *storey* is not counted if-
 - (i) it is situated at the top of the building and contains only heating, ventilating or lift equipment, water tanks, or similar service units or equipment; or
 - (ii) it is situated partly below the finished ground and the underside of the ceiling is not more than 1 m above the average finished level of the ground at the *external wall*, or if the *external wall* is more than 12 m long, the average for the 12 m part where the ground is lowest.
- (c) In a Class 7 or 8 building, a *storey* that has an average internal height of more than 6 m is counted as-
 - (i) one *storey* if it is the only *storey* above the ground; or
 - (ii) 2 *storeys* in any other case.
- (d) For the purposes of calculating the *rise in storeys* of a building-
 - (i) a *mezzanine* is regarded as a *storey* in that part of the building in which it is situated if its *floor area* is more than 200 m² or more than 1/3 of the *floor area* of the room, whichever is the lesser; and
 - (ii) two or more *mezzanines* are regarded as a *storey* in that part of the building in which they are situated if they are at or near the same level and have an aggregate floor area more than 200 m² or more than 1/3 of the *floor area* of the room, whichever is the lesser.

C1.3 Buildings of multiple classification

In a building of multiple classifications, the Type of construction *required* for the building is the most *fire-resisting* Type resulting from the application of Table C1.1 on the basis that the classification applying to the top *storey* applies to all *storeys*.

C1.4 Mixed types of construction

A building may be of mixed Types of construction where it is separated in accordance with C2.7 and the Type of construction is determined in accordance with C1.1 or C1.3.

*Deemed-to-Satisfy Provisions***C1.5 Two storey Class 2 or 3 buildings**

A Class 2 or 3 building, or a mixture of these Classes, having a *rise in storeys* of 2, may be of Type C construction if each *sole-occupancy unit* has-

- (a) access to at least 2 *exits*; or
- (b) its own direct access to a road or *open space*.

C1.6 Class 4 parts of buildings

A Class 4 part of a building requires the same FRL for building elements and the same construction separating the Class 4 part from the remainder of the building as a Class 2 part in similar circumstances.

C1.7 Open spectator stands and indoor sports stadiums

- (a) An *open spectator stand* or indoor sports stadium may be of Type C construction and need not comply with the other provisions of this Part if it contains not more than 1 tier of seating, is of *non-combustible* construction, and has only changing rooms, sanitary facilities or the like below the tiered seating.
- (b) In (a), one tier of seating means numerous rows of tiered seating incorporating cross-overs but within one viewing level.

C1.8 Lightweight construction

- (a) *Lightweight construction* must comply with Specification C1.8 if it is used in a wall system-
 - (i) that is *required* to have an FRL; or
 - (ii) for a *lift shaft*, *stair shaft* or *service shaft* or an *external wall* bounding a *public corridor* including a *non fire-isolated passageway* or *non fire-isolated ramp*, in a *spectator stand*, *sports stadium*, *cinema* or *theatre*, *railway station*, *bus station* or *airport terminal*.

Deemed-to-Satisfy Provisions

- (b) If *lightweight construction* is used for the *fire-resisting* covering of a steel column or the like, and if-
- (i) the covering is not in continuous contact with the column, then the void must be filled solid, to a height of not less than 1.2 m above the floor to prevent indenting; and
 - (ii) the column is liable to be damaged from the movement of vehicles, materials or equipment, then the covering must be protected by steel or other suitable material.

C1.9 * * * * *

This clause has deliberately been left blank.

C1.10 Fire Hazard Properties

Materials and assemblies in a Class 2, 3, 5, 6, 7, 8, or 9 building must comply with Specification C1.10.

C1.11 Performance of external walls in fire

Concrete *external walls* that could collapse as complete panels (eg. tilt-up and precast concrete), in a building having a *rise in storeys* of not more than 2, must comply with Specification C1.11.

Tas C1.101

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PART C2 COMPARTMENTATION AND SEPARATION

Deemed-to-Satisfy Provisions

C2.0 Deemed-to-Satisfy Provisions

Performance Requirements CP1 to CP9 are satisfied by complying with-

- (a) C1.1 to C1.11, C2.1 to C2.14 and C3.1 to C3.17; and
- (b) in a building containing an *atrium*, Part G3; and
- (c) for theatres, *stages* and public halls, Part H1.

C2.1 Application of Part

C2.2, C2.3 and C2.4 do not apply to a *carpark* provided with a sprinkler system complying with Specification E1.5, an *open-deck carpark* or an *open spectator stand*.

C2.2 General floor area limitations

- (a) The size of any *fire compartment* or *atrium* in a Class 5, 6, 7, 8 or 9 building must not exceed the relevant maximum *floor area* nor the relevant maximum volume set out in Table C2.2 and Clause C2.5 except as permitted in Clause C2.3.
- (b) A part of a building which contains only heating, ventilating, or lift equipment, water tanks, or similar service units is not counted in the *floor area* or volume of a *fire compartment* or *atrium* if it is situated at the top of the building.
- (c) In a building containing an *atrium*, the part of the *atrium well* bounded by the perimeter of the openings in the floors and extending from the level of the first floor above the *atrium* floor to the roof covering is not counted in the volume of the *atrium* for the purposes of this clause.

Deemed-to-Satisfy Provisions

Table C2.2 MAXIMUM SIZE OF FIRE COMPARTMENTS OR ATRIA				
Classification		Type of construction of building		
		Type A	Type B	Type C
5 or 9b	max <i>floor area</i> -	8 000 m ²	5 500 m ²	3 000 m ²
	max volume-	48 000 m ³	33 000 m ³	18 000 m ³
6, 7, 8 or 9a (except for <i>patient care areas</i>)	max <i>floor area</i> -	5 000 m ²	3 500 m ²	2 000 m ²
	max volume-	30 000 m ³	21 000 m ³	12 000 m ³

C2.3 Large isolated buildings

The size of a *fire compartment* in a building may exceed that specified in Table C2.2 where-

- (a) the building does not exceed 18 000 m² in *floor area* nor exceed 108 000 m³ in volume, if-
 - (i) the building is Class 7 or 8, it contains not more than 2 *storeys* and is provided with open space complying with C2.4(a) not less than 18 m wide around the building and-
 - (A) an *automatic* fire detection and alarm system complying with AS 1670 and monitored in accordance with Clause 7 of Specification E2.2a; or
 - (B) an *automatic* smoke exhaust system in accordance with Specification E2.2b; or
 - (C) *automatic smoke-and-heat vents* in accordance with Specification E2.2c; or
 - (D) natural smoke venting, with ventilation openings distributed as evenly as practicable and comprising permanent openings at roof level with a free area not less than 1.5% of *floor area* and low level openings which may be permanent or readily openable with a free area not less than 1.5% of *floor area*; or
 - (ii) the building is Class 5 to 9 and is protected throughout with a sprinkler system complying with Specification E1.5 and perimeter vehicular access complying with C2.4(b) is provided; or

NSW C2.3(a)

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Deemed-to-Satisfy Provisions

- (b) the building exceeds 18 000 m² in *floor area* or 108 000 m³ in volume, is protected throughout with a sprinkler system complying with Specification E1.5, is provided with a perimeter vehicular access complying with C2.4(b) and if-
 - (i) the ceiling height of the *fire compartment* is not more than 12 m, it has a smoke exhaust system in accordance with Specification E2.2b or *smoke-and-heat vents* in accordance with Specification E2.2c; or
 - (ii) the ceiling height is more than 12 m, it has a smoke exhaust system in accordance with Specification E2.2b; or
- (c) there is more than one building on the allotment and-
 - (i) each building complies with (a) or (b); or
 - (ii) if the buildings are closer than 6 m to each other they are regarded as one building and collectively comply with (a) or (b).

C2.4 Requirements for open spaces and vehicular access

- (a) An open space *required* by C2.3 must-
 - (i) be wholly within the allotment except that any road, river, or public place adjoining the allotment, but not the farthest 6 m of it may be included; and
 - (ii) include vehicular access in accordance with (b); and
 - (iii) not be used for the storage or processing of materials; and
 - (iv) not be built upon, except for guard houses and service structures (such as electricity substations and pump houses) which may encroach upon the width of the space if they do not unduly impede fire-fighting at any part of the perimeter of the allotment or unduly add to the risk of spread of fire to any building on an adjoining allotment.
- (b) Vehicular access *required* by this Part-
 - (i) must be capable of providing emergency vehicle access and passage from a public road; and

Deemed-to-Satisfy Provisions

- (ii) must have a minimum unobstructed width of 6 m with no part of its furthest boundary more than 18 m from the building and in no part of the 6 m width be built upon or used for any purpose other than vehicular or pedestrian movement; and
- (iii) must provide reasonable pedestrian access from the vehicular access to the building; and
- (iv) must have a load bearing capacity and unobstructed height to permit the operation and passage of *fire brigade* vehicles; and
- (v) where a public road complies with (i), (ii), (iii) and (iv) may serve as the vehicular access or part thereof.

C2.5 Class 9a buildings

A Class 9a building must comply with the following:

- (a) *Patient care areas* must be divided into *fire compartments* not exceeding 2000 m².
- (b) *Ward areas*-
 - (i) where the *floor area* exceeds 1000 m², must be divided into areas not more than 1000 m² by walls with an FRL of not less than 60/60/60; and
 - (ii) where the *floor area* exceeds 500 m², must be divided into areas not more than 500 m² by smoke proof walls complying with (d); and
 - (iii) where division of *ward areas* by *fire-resisting* walls under (a) and (b)(i) is not *required*, any smoke proof walls *required* under (b)(ii) must have an FRL of not less than 60/60/60.
- (c) *Treatment areas* must be divided into *floor areas* not more than 1000 m² by smoke-proof walls complying with (d).
- (d) A smoke-proof wall must-
 - (i) be *non-combustible* and extend to the underside of the floor above, to the underside of a *non-combustible* roof covering or to the underside of a ceiling having a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; and
 - (ii) not incorporate any glazed areas unless the glass is safety glass as defined in AS 1288; and

Deemed-to-Satisfy Provisions

- (iii) only have doorways which are fitted with smoke doors complying with Specification C3.4; and
 - (iv) not incorporate any penetrations unless the openings around the penetration are adequately stopped to prevent the free passage of smoke; and
 - (v) incorporate smoke dampers where air-handling ducts penetrate the wall, except where the air-handling system forms part of a smoke control system or is *required* to continue operating during a fire.
- (e) *Fire compartments* must be separated from the remainder of the building by *fire walls* and-
- (i) in Type A construction - floors and roof or ceiling as *required* in Specification C1.1; and
 - (ii) in Type B construction - floors with an FRL of not less than 120/120/120 and with the openings in *external walls* bounding *patient care areas* being vertically separated in accordance with the requirements of C2.6 as if the building were of Type A construction.
- (f) A door *required* to be smoke proof or have an FRL, other than one that serves a *fire compartment* provided with a zone smoke control system in accordance with AS 1668.1, must provide a smoke reservoir by not extending within 400 mm of the underside of-
- (i) a roof covering; or
 - (ii) the floor above; or
 - (iii) an imperforate false ceiling that will prevent the free passage of smoke.
- (g) The following ancillary use areas located within a *patient care area* must be separated from the *patient care area* by walls with an FRL of not less than 60/60/60 and extend to a *non-combustible* roof covering, the floor above or a ceiling with a *resistance to the incipient spread of fire* of not less than 60 minutes, the doorway being protected with fire doors having an FRL of not less than -/60/30:
- (i) A kitchen and related food preparation areas having a combined *floor area* of more than 30 m².
 - (ii) A room containing a hyperbaric facility (pressure chamber).
 - (iii) A room used predominantly for the storage of medical records having a *floor area* of more than 10 m².

Deemed-to-Satisfy Provisions

- (iv) A laundry, where items of equipment are of the type that are potential fire sources (eg gas fire dryers).

C2.6 Vertical separation of openings in external walls

If in a building (other than an *open-deck carpark* or an *open spectator stand*) which is *required* to be of Type A construction and does not have a sprinkler system complying with Specification E1.5, any part of a *window* or other opening in an *external wall*, (except openings within the same stairway)-

- (a) is above another opening in the *storey* next below; and
- (b) its vertical projection falls no further than 450 mm outside the lower opening (measured horizontally),

the openings must be separated by-

- (c) a spandrel which-
 - (i) is not less than 900 mm in height; and
 - (ii) extends not less than 600 mm above the upper surface of the intervening floor; and
 - (iii) is of *non-combustible* material having an FRL not less than 60/60/60; or
- (d) part of a *curtain wall* or *panel wall* that complies with (c); or
- (e) construction that complies with (c) behind a *curtain wall* or *panel wall* and has any gaps packed with a *non-combustible* material that will withstand thermal expansion and structural movement of the walling without loss of seal against fire and smoke; or
- (f) a slab or other horizontal construction that-
 - (i) projects outwards from the external face of the wall not less than 1100 mm; and
 - (ii) extends along the wall not less than 450 mm beyond the openings concerned; and
 - (iii) is *non-combustible* and has an FRL of not less than 60/60/60.

C2.7 Separation by fire walls

A part of a building separated from the remainder of the building by a *fire wall* is treated as a separate building for the purposes of the deemed-to-satisfy provisions of Sections C, D and E if-

Deemed-to-Satisfy Provisions

- (a) the *fire wall*-
 - (i) extends through all *storeys* and spaces in the nature of *storeys* that are common to that part and any adjoining part of the building; and
 - (ii) is carried through to the underside of the roof covering; and
 - (iii) has the relevant FRL prescribed by Specification C1.1 for each of the adjoining parts, and if these are different, the greater FRL; and
- (b) any openings in a *fire wall* comply with the deemed-to-satisfy provisions of Part C3; and
- (c) except for roof battens with dimensions of 75 mm x 50 mm or less, timber or other *combustible* building elements do not pass through or cross the *fire wall*; and
- (d) where the roof of one of the adjoining parts is lower than the roof of the other part, the *fire wall* extends to the underside of-
 - (i) the covering of the higher roof, or not less than 6 m above the covering of the lower roof; or
 - (ii) the lower roof if it has an FRL not less than that of the *fire wall* and no openings closer than 3 m to any wall above the lower roof; or
 - (iii) the lower roof if its covering is *non-combustible* and the lower part has a sprinkler system complying with Specification E1.5; or
 - (iv) or the design of the building must otherwise restrict the spread of fire from the lower part to the higher part.

C2.8 Separation of classifications in the same storey

If a building has parts of different classifications located alongside one another in the same *storey*-

- (a) each building element in that *storey* must have the higher FRL prescribed in Specification C1.1 for that element for the classifications concerned; or
- (b) the parts must be separated in that *storey* by a *fire wall* with whichever is the greater of-

Deemed-to-Satisfy Provisions

- (i) an FRL of 90/90/90 if the parts are served in any *storey* by the same *public corridor*, public hallway, or the like; and
- (ii) the higher FRL prescribed in Table 3 or 4 of Specification C1.1 for the classifications concerned; or
- (c) where one part is a *carpark* complying with Table 3.9, 4.2 or 5.2 of Specification C1.1, the parts may be separated by a *fire wall* complying with the appropriate Table.

C2.9 Separation of classifications in different storeys

If parts of different classification are situated one above the other in adjoining *storeys* they must be separated as follows:

- (a) Type A construction - The floor between the adjoining parts must have an FRL not less than that prescribed in Specification C1.1 for the classification of the lower *storey*.
- (b) Type B or C construction (applicable only if one of the adjoining parts is of Class 2, 3 or 4) - The underside of the floor (including the sides and underside of any floor beams) must have a *fire-protective covering*.

C2.10 Separation of lift shafts

Lifts connecting more than 2 *storeys*, or more than 3 *storeys* if the building is sprinklered, (other than lifts which are wholly within an *atrium*) must be separated from the remainder of the building by enclosure in a *shaft* in which-

- (a) in a building *required* to be of Type A construction - the walls have the relevant FRL prescribed by Specification C1.1; and
- (b) in a building *required* to be of Type B construction- the walls are-
 - (i) in accordance with (a) if the *shaft* is-
 - (A) *loadbearing*; or
 - (B) located within a *patient care area* in a Class 9a building; or
 - (ii) of *non-combustible* construction if the *shaft* is *non-loadbearing* and is not located within a *patient care area* in a Class 9a building; and

Deemed-to-Satisfy Provisions

- (c) openings for lift landing doors and services are protected in accordance with the deemed-to-satisfy provisions of Part C3.

C2.11 Stairways and lifts in one shaft

A stairway and lift must not be in the same *shaft* if either the stairway or the lift is *required* to be in a *fire-resisting shaft*.

C2.12 Separation of equipment

- (a) Equipment other than that described in (b) and (c) must be separated from the remainder of the building with construction complying with (d), if that equipment comprises-
- (i) lift motors and lift control panels, except that the separating construction between the lift *shaft* and the lift motor room need only be 120/ - / - ; or
 - (ii) emergency generators or central smoke control plant; or
 - (iii) boilers; or
 - (iv) batteries.
- (b) Isolation of equipment need not comply with (a) if the equipment comprises-
- (i) smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or
 - (ii) stair pressurising equipment installed in compliance with the relevant provisions of AS 1668.1; or
 - (iii) equipment otherwise adequately separated from the remainder of the building.
- (c) Separation of on-site fire pumps must comply with the requirements of E1.3.
- (d) Separating construction must-
- (i) have an FRL as *required* by Specification C1.1, but not less than 120/120/120; and
 - (ii) have any doorway in that construction protected with a *self-closing* fire door having an FRL of not less than - /120/ 30.

*Deemed-to-Satisfy Provisions***C2.13 Electricity supply system**

- (a) An electricity substation located within a building must-
 - (i) be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and
 - (ii) have any doorway in that construction protected with a *self-closing* fire door having an FRL of not less than - /120/30.
- (b) A main switchboard located within the building which sustains emergency equipment operating in the emergency mode must-
 - (i) be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and
 - (ii) have any doorway in that construction protected with a *self-closing* fire door having an FRL of not less than - /120/30.
- (c) Electrical conductors located within a building that supply-
 - (i) a substation located within the building which supplies a main switchboard covered by (b); or
 - (ii) a main switchboard covered by (b), must-
 - (iii) have a classification in accordance with AS/NZS 3013 of not less than-
 - (A) if located in a position that could be subject to damage by motor vehicles - WS53W; or
 - (B) otherwise-WS52W; or
 - (iv) be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120.

C2.14 Public corridors in Class 2 and 3 buildings

In a Class 2 or 3 building, a *public corridor*, if more than 40 m in length, must be divided at intervals of not more than 40 m with smoke-proof walls complying with C2.5(d).

PART C3 PROTECTION OF OPENINGS

Deemed-to-Satisfy Provisions

C3.0 Deemed-to-Satisfy Provisions

Performance requirements CP1 to CP9 are satisfied by complying with-

- (a) C1.1 to C1.11, C2.1 to C2.14 and C3.1 to C3.17; and
- (b) in a building containing an *atrium*, Part G3; and
- (c) for theatres, *stages* and public halls, Part H1.

C3.1 Application of Part

- (a) The deemed-to-satisfy provisions of this Part do not apply to-
 - (i) control joints, weep holes and the like in *external walls* of masonry construction and joints between panels in *external walls* of pre-cast concrete panel construction if, in all cases they are not larger than necessary for the purpose; and
 - (ii) *non-combustible* ventilators for sub-floor or cavity ventilation, if each does not exceed 45 000 mm² in face area and is spaced not less than 2 m from any other ventilator in the same wall; and
 - (iii) openings in the vertical plane formed between building elements at the construction edge or perimeter of a balcony or verandah, colonnade, terrace, or the like; and
 - (iv) in a *carpark*-
 - (A) service penetrations through; and
 - (B) openings formed by a vehicle ramp in, a floor other than a floor that separates a part not used as a *carpark*
- (b) For the purposes of the deemed-to-satisfy provisions of this Part-
 - (i) openings in building elements *required* to be *fire-resisting* include doorways, *windows* (including any associated fanlight), infill panels and fixed or openable glazed areas that do not have the *required* FRL; and

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- (ii) openings, other than those covered under (a)(iii), between building elements such as columns, beams and the like, in the plane formed at the construction edge or perimeter of the building, are deemed to be openings in an *external wall*.

C3.2 Protection of openings in external walls

Openings in an *external wall* that is *required* to have an FRL must-

- (a) be not less from a *fire-source feature* to which it is exposed than-
 - (i) 1 m in a building with a *rise in storeys* of not more than 1; or
 - (ii) 1.5 m in a building with a *rise in storeys* of more than 1; and
- (b) if situated less from a *fire-source feature* to which it is exposed than-
 - (i) 3 m from a side or rear boundary of the allotment; or
 - (ii) 6 m from the far boundary of a road adjoining the allotment, if not located in a *storey* at or near ground level; or
 - (iii) 6 m from another building on the allotment that is not Class 10,

be protected in accordance with C3.4 and if wall-wetting sprinklers are used, they are located externally.
- (c) if *required* to be protected under (b), not occupy more than 1/3 of the area of the *external wall* of the *storey* in which it is located unless they are in a Class 9b building used as an *open spectator stand*.

NSW C3.2(a)

Amdt 0

C3.3 Separation of openings in different fire compartments

Unless they are protected in accordance with C3.4, the distance between openings in *external walls* in *fire compartments* separated by a *fire wall* must not be less than that set out in Table C3.3.

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Table C3.3 DISTANCE BETWEEN OPENINGS IN DIFFERENT FIRE COMPARTMENTS	
Angle between walls	Min. Distance between openings
0° (walls opposite)	6 m
more than 0° to 45°	5 m
more than 45° to 90°	4 m
more than 90° to 135°	3 m
more than 135° to less than 180°	2 m
180° or more	Nil

Amdt 0

C3.4 Acceptable methods of protection

- (a) Where protection is *required*, doorways, *windows* and other openings must be protected as follows:
 - (i) Doorways - internal or *external wall*-wetting sprinklers as appropriate or - /60/30 fire doors (*self-closing* or *automatic* closing).
 - (ii) Windows - internal or *external wall*-wetting sprinklers as appropriate, - /60/- fire *windows* (*automatic* or permanently fixed in the closed position) or - /60/- *automatic* fire shutters.
 - (iii) Other openings - internal or *external wall*-wetting sprinklers as appropriate or construction having an FRL not less than - /60/-.
- (b) Fire doors, fire *windows* and fire shutters must comply with Specification C3.4.

C3.5 Doorways in fire walls

- (a) The aggregate width of openings for doorways in a *fire wall*, which are not part of a *horizontal exit*, must not exceed 1/2 of the length of the *fire wall*, and each doorway must be protected by-
 - (i) 2 fire doors or fire shutters, one on each side of the doorway, each of which has an FRL of not less than 1/2 that *required* by Specification C1.1 for the *fire wall* except that each door or shutter must have an *insulation* level of at least 30; or
 - (ii) a fire door on one side and a fire shutter on the other side of the doorway, each of which complies with (i); or

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- (iii) a single fire door or fire shutter which has an FRL of not less than that *required* by Specification C1.1 for the *fire wall* except that each door or shutter must have an *insulation* level of at least 30.
- (b) (i) A fire door or fire shutter *required* by (a)(i), (a)(ii) or (a)(iii) must be *self-closing*, or *automatic* closing in accordance with (ii) and (iii).
- (ii) The *automatic* closing operation must be initiated by the activation of a smoke detector, or a heat detector if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670 and located on each side of the *fire wall* not more than 1.5 m horizontal distance from the opening.
- (iii) Where any other *required* suitable fire alarm system, including a sprinkler system complying with Specification E 1.5, is installed in the building, activation of the system in either *fire compartment* separated by the *fire wall* must also initiate the *automatic* closing operation.

C3.6 Sliding fire doors

- (a) If a doorway in a *fire wall* is fitted with a sliding fire door which is open when the building is in use-
 - (i) it must be held open with an electromagnetic device, which when de-activated in accordance with (b), allows the door to be fully closed not less than 20 seconds, and not more than 30 seconds, after release; and
 - (ii) in the event of power failure to the door - the door must fail safe in the closed position in accordance with (i); and
 - (iii) an audible warning device must be located near the doorway and a red flashing warning light of adequate intensity on each side of the doorway must be activated in accordance with (b); and
 - (iv) signs must be installed on each side of the doorway located directly over the opening stating-

WARNING- SLIDING FIRE DOOR

 in capital letters not less than 50 mm high in a colour contrasting with the background.

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- (b) (i) The electromagnetic device must be de-activated and the warning system activated by heat or smoke detectors, as appropriate, installed in accordance with AS 1905.1 and the relevant provisions of AS 1670.
- (ii) Where any other *required* suitable fire alarm system, including a sprinkler system complying with Specification E1.5, is installed in the building, activation in either *fire compartment* separated by the *fire wall* must also de-activate the electromagnetic device and activate the warning system.

C3.7 Protection of doorways in horizontal exits

- (a) A doorway that is part of a *horizontal exit* must be protected by either-
 - (i) a single fire door that has an FRL of not less than that *required* by Specification C1.1 for the *fire wall* except that the door must have an *insulation* level of at least 30; or
 - (ii) in a Class 7 or 8 building - 2 fire doors, one on each side of the doorway, each with an FRL of not less than 1/2 that *required* by Specification C1.1 for the *fire wall* except that each door must have an *insulation* level of at least 30.
- (b) (i) Each door *required* by (a) must be *self-closing*, or *automatic-closing* in accordance with (ii) and (iii).
- (ii) The *automatic-closing* operation must be initiated by the activation of a smoke detector, or a heat detector if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670 and located on each side of the *fire wall* not more than 1.5 m horizontal distance from the opening.
- (iii) Where any other *required* suitable fire alarm system, including a sprinkler system complying with Specification E1.5, is installed in the building, activation of the system in either *fire compartment* separated by the *fire wall* must also initiate the *automatic-closing* operation.

*Deemed-to-Satisfy Provisions***C3.8 Openings in fire-isolated exits**

- (a) (i) Doorways that open to *fire-isolated stairways, fire-isolated passageways or fire-isolated ramps*, and are not doorways opening to a road or *open space*, must be protected by - /60/30 fire doors that are *self-closing*, or *automatic-closing* in accordance with (ii) and (iii).
- (ii) The *automatic* closing operation must be initiated by the activation of a smoke detector, or a heat detector if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670 and located not more than 1.5 m horizontal distance from the approach side of the opening.
- (iii) Where any other *required* suitable fire alarm system, including a sprinkler system complying with Specification E 1.5, is installed in the building, activation of the system must also initiate the *automatic-closing* operation.
- (b) A *window* in an *external wall* of a *fire-isolated stairway, fire-isolated passageway or fire-isolated ramp* must be protected in accordance with C3.4 if it is within 6 m of, and exposed to-
- (i) a *fire-source feature*, or
- (ii) a *window* or other opening in a wall of the same building, other than in the same fire-isolated enclosure.

C3.9 Service penetrations in fire-isolated exits

Fire-isolated *exits* must not be penetrated by any services other than-

- (a) electrical wiring associated with a lighting or pressurisation system serving the *exit* or an intercommunication system in accordance with D2.22; or
- (b) ducting associated with the pressurisation system if it-
- (i) is constructed of material having an FRL of not less than - /120/60 where it passes through any other part of the building; and
- (ii) does not open into any other part of the building; or
- (c) water supply pipes for fire services.

*Deemed-to-Satisfy Provisions***C3.10 Openings in fire-isolated lift shafts**

- (a) **Doorways** - If a lift *shaft* is *required* to be fire-isolated under Part C2, an entrance doorway to that *shaft* must be protected by - /60/ - fire doors that-
- (i) comply with AS 1735.11; and
 - (ii) are set to remain closed except when discharging or receiving passengers, goods or vehicles.
- (b) **Lift indicator panels** - A lift call panel, indicator panel or other panel in the wall of a fire-isolated lift *shaft* must be backed by construction having an FRL of not less than - /60/60 if it exceeds 35 000 mm² in area.

C3.11 Bounding construction: Class 2, 3 and 4 buildings

- (a) A doorway in a Class 2 or 3 building must be protected if it provides access from a *sole-occupancy unit* to-
- (i) a *public corridor*, public hallway, or the like; or
 - (ii) a room not within a *sole-occupancy unit*; or
 - (iii) the landing of an internal non *fire-isolated stairway* that serves as a *required exit*; or
 - (iv) another *sole-occupancy unit*.
- (b) A doorway in a Class 2 or 3 building must be protected if it provides access from a room not within a *sole-occupancy unit* to-
- (i) a *public corridor*, public hallway, or the like; or
 - (ii) the landing of an internal non *fire-isolated stairway* that serves as a *required exit*.
- (c) A doorway in a Class 4 part must be protected if it provides access to any other internal part of the building.
- (d) Protection for a doorway-
- (i) must be at least-
 - (A) in a building of Type A construction - a *self-closing* - /60/30 fire door; and
 - (B) in a building of Type B or C construction - a *self-closing*, tight fitting, solid core door, not less than 35 mm thick; except

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<p>(ii) in a Class 3 building used as a <i>residential aged care building</i>-</p> <p>(A) may be a tight fitting, solid core door, not less than 35 mm thick; and</p> <p>(B) need not be <i>self-closing</i> nor <i>automatic-closing</i>, provided the building is protected with a sprinkler system complying with Specification E1.5 and is divided into areas not more than 500 m² with smoke-proof walls complying with C2.5(d).</p> <p>(e) Other openings in <i>internal walls</i> which are <i>required</i> to have an FRL with respect to <i>integrity</i> and <i>insulation</i> must not reduce the <i>fire-resisting</i> performance of the wall.</p> <p>(f) (i) A door <i>required</i> by (d) may be <i>automatic-closing</i> in accordance with (ii) and (iii).</p> <p>(ii) The <i>automatic-closing</i> operation must be initiated by the activation of a smoke detector, or a heat detector if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670 and located not more than 1.5 m horizontal distance from the approach side of the opening.</p> <p>(iii) Where any other <i>required</i> suitable fire alarm system, including a sprinkler system complying with Specification E 1.5, is installed in the building, activation of the system must also initiate the <i>automatic-closing</i> operation.</p> <p>(g) In a Class 2 or 3 building where a path of travel to an <i>exit</i> does not provide a person seeking egress with a choice of travel in different directions to alternative <i>exits</i> and is along an open balcony, landing or the like and passes an <i>external wall</i> of-</p> <p>(i) another <i>sole-occupancy unit</i>; or</p> <p>(ii) a room not within a <i>sole-occupancy unit</i>,</p> <p>then that <i>external wall</i> must-</p> <p>(iii) be constructed of concrete or masonry, or be lined internally with a <i>fire-protective covering</i>, and</p> <p>(iii) have any doorway fitted with a <i>self-closing</i>, tight-fitting solid core door not less than 35 mm thick; and</p> <p>(iv) have any <i>windows</i> or other openings protected in accordance with C3.4 or located at least 1.5 m above the floor of the balcony, landing or the like.</p>	<p>NSW C3.11(d)(ii)</p> <p>NSW C3.11(h)</p>
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*Deemed-to-Satisfy Provisions***C3.12 Openings in floors for services**

In a building of Type A construction, services passing through a floor must either be installed in *shafts* complying with Specification C1.1 or protected in accordance with C3.15.

C3.13 Openings in shafts

In a building of Type A construction, an opening in a wall providing access to a ventilating, pipe, garbage or other service *shaft* must be protected by-

- (a) if it is in a *sanitary compartment* - a door or panel which, together with its frame, is *non-combustible* or has an FRL of not less than - /30/30; or
- (b) a *self-closing* - /60/30 fire door or hopper; or
- (c) an access panel having an FRL of not less than - /60/30; or
- (d) if the *shaft* is a garbage *shaft* - a door or hopper of *non-combustible* construction.

C3.14 * * * * *

This clause has deliberately been left blank.

C3.15 Openings for service installations

Where an electrical, electronic, plumbing, mechanical ventilation, air-conditioning or other service penetrates a building element (other than an *external wall* or roof) that is *required* to have an FRL or a *resistance to the incipient spread of fire*, that installation must comply with one of the following:

- (a) The method and materials used are identical with a prototype assembly of the service and building element which has been tested in accordance with AS 4072.1 and AS 1530.4 and has achieved the *required* FRL or *resistance to the incipient spread of fire*.
- (b) It complies with (a) except for the *insulation* criteria relating to the service if-
 - (i) the service is protected so that *combustible* material cannot be located within 100 mm of it; and
 - (ii) it is not located in a *required exit*.

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- (c) In the case of ventilating or air-conditioning ducts or equipment the installation is in accordance with AS 1668.1.
- (d) The service is a metal pipe installed in accordance with Specification C3.15 and it-
 - (i) penetrates a wall, floor or ceiling, but not a ceiling *required to have a resistance to the incipient spread of fire*; and
 - (ii) connects not more than 2 *fire compartments* in addition to any *fire-resisting service shafts*; and
 - (iii) does not contain a flammable or *combustible* liquid or gas.
- (e) The service is sanitary plumbing installed in accordance with Specification C3.15 and it-
 - (i) is of metal or UPVC pipe; and
 - (ii) penetrates the floors of a Class 5, 6, 7, 8 or 9b building; and
 - (iii) is in a *sanitary compartment* separated from other parts of the building by walls with the FRL *required* by Specification C1.1 for a stair *shaft* in the building and a *self-closing - /60/30* fire door.
- (f) The service is a wire or cable, or a cluster of wires or cables installed in accordance with Specification C3.15 and it-
 - (i) penetrates a wall, floor or ceiling, but not a ceiling *required to have a resistance to the incipient spread of fire*; and
 - (ii) connects not more than 2 *fire compartments* in addition to any *fire-resisting service shafts*.
- (g) The service is an electrical switch, outlet, or the like, and it is installed in accordance with Specification C3.15.

C3.16 Construction joints

Construction joints, spaces and the like in and between building elements *required to be fire-resisting* with respect to *integrity* and *insulation* must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the *required* FRL.

*Deemed-to-Satisfy Provisions***C3.17 Columns protected with lightweight construction to achieve an FRL**

A column protected by *lightweight construction* to achieve an FRL which passes through a building element that is *required* to have an FRL or a *resistance to the incipient spread of fire*, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the *required* FRL or *resistance to the incipient spread of fire*.

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SPECIFICATION **C1.1** FIRE-RESISTING CONSTRUCTION

Deemed-to-Satisfy Provisions

1. SCOPE

This Specification contains requirements for the *fire-resisting construction* of building elements.

2. GENERAL REQUIREMENTS

2.1 Exposure to fire-source features

- (a) A part of a building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the *fire-source feature*, or vertical projection of the feature, is not obstructed by another part of the building that-
 - (i) has an FRL of not less than 30/-/-; and
 - (ii) is neither transparent nor translucent.
- (b) A part of a building element is not exposed to a *fire-source feature* if the *fire-source feature* is-
 - (i) an *external wall* of another building that stands on the allotment and the part concerned is more than 15 m above the highest part of that *external wall*; or
 - (ii) a side or rear boundary of the allotment and the part concerned is below the level of the finished ground at every relevant part of the boundary concerned.
- (c) If various distances apply for different parts of a building element-
 - (i) the entire element must have the FRL applicable to that part having the least distance between itself and the relevant *fire-source feature*; or
 - (ii) each part of the element must have the FRL applicable according to its individual distance from the relevant *fire-source feature*,

but this provision does not override or permit any exemption from Clause 2.2.

*Deemed-to-Satisfy Provisions***2.2 Fire protection for a support of another part**

- (a) Where a part of a building *required* to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part, subject to (b), must-
- (i) have an FRL not less than that *required* by other provisions of this Specification; and
 - (ii) if located within the same *fire compartment* as the part it supports have an FRL in respect of *structural adequacy* the greater of that *required* -
 - (A) for the supporting part itself; and
 - (B) for the part it supports; and
 - (iii) be *non-combustible*-
 - (A) if *required* by other provisions of this Specification; or
 - (B) if the part it supports is *required* to be *non-combustible*.
- (b) The following building elements need not comply with (a)(ii) and (a)(iii)(B):
- (i) An element providing lateral support to an *external wall* complying with Clause 5.1(b) or C1.11.
 - (ii) An element providing support within a *carpark* and complying with Table 3.9, 4.2 or 5.2.
 - (iii) A roof providing lateral support in a building-
 - (A) of Type A construction if it complies with Clause 3.5(a), (b) or (d); and
 - (B) of Type B and C construction.
 - (iv) A column providing lateral support to a wall where the column complies with Clause 2.5(a) and (b).
 - (v) An element providing lateral support to a *fire wall* or *fire-resisting* wall, provided the wall is supported on both sides and failure of the element on one side does not affect the fire performance of the wall.

2.3 Lintels

A lintel must have the FRL *required* for the part of the building in which it is situated, unless it does not contribute to the support of a fire door, fire *window* or fire shutter, and-

- (a) it spans an opening in-
 - (i) a wall of a building containing only one *storey*; or

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- (ii) a non-loadbearing wall of a Class 2 or 3 building; or
- (b) it spans an opening in masonry which is not more than 150 mm thick and-
 - (i) not more than 3 m wide if the masonry is non-loadbearing; or
 - (ii) not more than 1.8 m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of a cavity wall.

2.4 Attachments not to impair fire-resistance

- (a) A *combustible* material may be used as a finish or lining to a wall or roof, or in a sign, sunscreen or blind, awning, or other attachment to a building element which has the *required* FRL if-
 - (i) the material is exempted under Clause 7 of Specification C1.10 or complies with the Early Fire Hazard Indices prescribed in Clause 2 of Specification C1.10; and
 - (ii) it is not located near or directly above a *required exit* so as to make the *exit* unusable in a fire; and
 - (iii) it does not otherwise constitute an undue risk of fire spread via the facade of the building.
- (b) The attachment of a facing or finish, or the installation of ducting or any other service, to a part of a building *required* to have an FRL must not impair the *required* FRL of that part.

2.5 General concessions

- (a) **Steel columns** - A steel column, other than one in a *fire wall* or *common wall*, need not have an FRL in a building that contains-
 - (i) only 1 *storey*; or
 - (ii) 2 *storeys* in some of its parts and 1 *storey* only in its remaining parts if the sum of the *floor areas* of the upper *storeys* of its 2 *storey* parts does not exceed the lesser of-
 - (A) 1/8 of the sum of the *floor areas* of the 1 *storey* parts; or

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- (B) in the case of a building to which one of the maximum *floor areas* specified in Table C2.2 is applicable - 1/10 of that area; or
- (C) in the case of a building to which two or more of the maximum *floor areas* specified in Table C2.2 is applicable - 1/10 of the lesser or those areas.
- (b) **Timber columns** - A timber column may be used in a single *storey* building if-
- (i) in a *fire wall* or *common wall* the column has an FRL not less than that listed in the appropriate Table 3, 4 or 5; and
 - (ii) in any other case where the column is *required* to have an FRL in accordance with Table 3, 4 or 5, it has an FRL of not less than 30/-/-.
- (c) **Structures on roofs** - A *non-combustible* structure situated on a roof need not comply with the other provisions of this Specification if it only contains one or more of the following:
- (i) Hot water or other water tanks.
 - (ii) Ventilating ductwork, ventilating fans and their motors.
 - (iii) Air-conditioning chillers.
 - (iv) *Window* cleaning equipment.
 - (v) Lift equipment.
 - (vi) Other service units that are *non-combustible* and do not contain *combustible* liquids or gases.
- (d) **Curtain walls and panel walls** - A requirement for an *external wall* to have an FRL does not apply to a *curtain wall* or *panel wall* which is of *non-combustible* construction and fully protected by *automatic external wall-wetting* sprinklers.
- (e) **Non-combustible materials** - The following materials, though *combustible* or containing *combustible* fibres, may be used wherever a *non-combustible* material is *required*:
- (i) Plasterboard.
 - (ii) Perforated gypsum lath with a normal paper finish.
 - (iii) Fibrous-plaster sheet conforming to AS 2185 Specification for Fibrous Plaster Products.
 - (iv) Fibre-reinforced cement sheeting.

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- (v) Pre-finished metal sheeting having a *combustible* surface finish not exceeding 1 mm thickness and where the *Spread-of-Flame Index* of the product is not greater than 0.
- (vi) Bonded laminated materials where-
 - (A) each laminate is *non-combustible*; and
 - (B) each adhesive layer does not exceed 1 mm in thickness; and
 - (C) the total thickness of adhesive layers does not exceed 2 mm; and
 - (D) the *Spread-of-Flame Index* and the *Smoke-Developed Index* of the laminated material as a whole does not exceed 0 and 3 respectively.
- (f) **Balconies and verandahs** - A balcony, verandah or the like and any incorporated supporting part, which is attached to or forms part of a building, need not comply with Tables 3, 4 and 5 if-
 - (i) it does not form part of the only path of travel to a *required* exit from the building; and
 - (ii) in Type A construction-
 - (A) it is situated not more than 2 *storeys* above the lowest *storey* providing direct egress to a road or *open space*; and
 - (B) any supporting columns are of *non-combustible* construction.

2.6 Mezzanine floors: Concession

- (a) This Clause does not apply to a Class 9b building that is a spectator stand or audience viewing area accommodating more than 100 persons as calculated according to D1.13.
- (b) A *mezzanine* and its supports need not have an FRL or be *non-combustible* provided-
 - (i) the total *floor area* of all the *mezzanines* in the same room does not exceed 1/3 the *floor area* of the room or 200 m², whichever is the lesser; and
 - (ii) the FRL of each wall and column that supports any other part of the building within 6 m of the *mezzanine* is increased by the amount listed in Table 2.6.

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**Table 2.6
INCREASED FRLs - CONSTRUCTION SURROUNDING MEZZANINES**

Level otherwise required for any FRL criterion (mins)	Increase in level to (not less than):
30	60
60	90
90	120
120	180
180	240

The increase in level applies to each FRL criterion (structural adequacy, integrity or insulation) relevant to the building element concerned.

2.7 Enclosure of shafts

Shafts required to have an FRL must be enclosed at the top and bottom by construction having an FRL not less than that *required* for the walls of a *non-loadbearing shaft* in the same building, except that these provisions need not apply to-

- (a) the top of a *shaft* extending beyond the roof covering, other than one enclosing a *fire-isolated stairway* or *ramp*; or
- (b) the bottom of a *shaft* if it is *non-combustible* and laid directly on the ground.

2.8 Carparks in Class 2 and 3 buildings

- (a) If a Class 2 building contains not more than 4 *storeys* of which-
 - (i) one *storey* is Class 7 used solely for the purpose of parking motor vehicles or for some other purpose that is ancillary to a Class 2; and
 - (ii) the remaining *storeys* are of Class 2,
 the *carpark storey* is regarded as Class 2 only for the purpose of determining the relevant *fire-resisting* requirements of this Specification.

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- (b) If a Class 3 building contains not more than 3 *storeys* of which-
- (i) one *storey* is Class 7 used solely for the purpose of parking motor vehicles or for some other purpose that is ancillary to a Class 3; and
 - (ii) the remaining *storeys* are of Class 3,
- the *carpark storey* is regarded as Class 3 only for the purpose of determining the relevant *fire-resisting* requirements of this Specification.

2.9 Residential aged care building: Concession

In a Class 3 building protected with a sprinkler system complying with Specification E1.5 and used as a *residential aged care building*, any FRL criterion prescribed in Tables 3, 4 or 5-

- (a) for any floor and any *loadbearing* wall, may be reduced to 60, except any FRL criterion of 90 for an *external wall* must be maintained when tested from the outside; and
- (b) for any non-*loadbearing internal wall*, need not apply if-
 - (i) it is lined on each side with 13 mm standard grade plasterboard or similar *non-combustible* material; and
 - (ii) it extends-
 - (A) to the underside of the floor next above; or
 - (B) to the underside of a ceiling with a *resistance to the incipient spread of fire* of 60 minutes; or
 - (C) to the underside of a *non-combustible* roof covering; and
 - (iii) any insulation installed in the cavity of the wall is *non-combustible*; and
 - (iv) any construction joint, space or the like between the top of the wall and the floor, ceiling or roof is smoke sealed with intumescent putty or other suitable material.

*Deemed-to-Satisfy Provisions***3. TYPE A FIRE-RESISTING CONSTRUCTION****3.1 Fire-resistance of building elements**

In a building *required* to be of Type A construction-

- (a) each building element listed in Table 3 and any beam or column incorporated in it, must have an FRL not less than that listed in the Table for the particular Class of building concerned; and
- (b) *external walls, common walls* and the flooring and floor framing of lift pits must be *non-combustible*, and
- (c) any *internal wall required* to have an FRL must extend to-
 - (i) the underside of the floor next above; or
 - (ii) the underside of a roof complying with Table 3; or
 - (iii) if under Clause 3.5 the roof is not *required* to comply with Table 3, the underside of the *non-combustible* roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less, must not be crossed by timber or other *combustible* building elements; or
 - (iii) a ceiling that is immediately below the roof and has a *resistance to the incipient spread of fire* to the roof space between the ceiling and the roof of not less than 60 minutes; and
- (d) a *loadbearing internal wall* and a *loadbearing fire wall* (including those that are part of a *loadbearing shaft*) must be of concrete or masonry; and
- (e) a *non-loadbearing-*
 - (i) *internal wall required* to be *fire-resisting*, and
 - (ii) lift, ventilating, pipe, garbage, or similar *shaft* that is not for the discharge of hot products of combustion, must be of *non-combustible* construction; and
- (f) the FRLs specified in Table 3 for an external column apply also to those parts of an internal column that face and are within 1.5 m of a *window* and are exposed through that *window* to a *fire-source feature*.

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Table 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS				
Building element	Class of building - FRL: (in minutes) <i>Structural adequacy/Integrity/Insulation</i>			
	2, 3 or 4 part	5, 9 or 7 <i>carpark</i>	6	7 (other than a <i>carpark</i>) or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any <i>fire-source feature</i> to which it is exposed is -				
For <i>loadbearing</i> parts-				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 60	120/ 90/ 90	180/180/120	240/240/180
3 or more	90/ 60/ 30	120/ 60/ 30	180/120/ 90	240/180/ 90
For <i>non-loadbearing</i> parts-				
less than 1.5 m	- / 90/ 90	- /120/120	- /180/180	- /240/240
1.5 to less than 3 m	- / 60/ 60	- / 90/ 90	- /180/120	- /240/180
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
EXTERNAL COLUMN not incorporated in an <i>external wall</i> , where the distance from any <i>fire-source feature</i> to which it is exposed is -				
less than 3 m	90/ - / -	120/ - / -	180/ - / -	240/ - / -
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
COMMON WALLS and FIRE WALLS -				
	90/ 90/ 90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS-				
<i>Fire-resisting lift and stair shafts-</i>				
<i>Loadbearing</i>	90/ 90/ 90	120/120/120	180/120/120	240/120/120
<i>Non-loadbearing</i>	- / 90/ 90	- /120/120	- /120/120	- /120/120
Bounding <i>public corridors</i> , public hallways and the like-				
<i>Loadbearing</i>	90/ 90/ 90	120/ - / -	180/ - / -	240/ - / -
<i>Non-loadbearing</i>	- / 60/ 60	- / - / -	- / - / -	- / - / -
Between or bounding <i>sole-occupancy units-</i>				
<i>Loadbearing</i>	90/ 90/ 90	120/ - / -	180/ - / -	240/ - / -
<i>Non-loadbearing</i>	- / 60/ 60	- / - / -	- / - / -	- / - / -
Ventilating, pipe, garbage, and like <i>shafts</i> not used for the discharge of hot products of combustion-				
<i>Loadbearing</i>	90/ 90/ 90	120/ 90/ 90	180/120/120	240/120/120
<i>Non-loadbearing</i>	- / 90/ 90	- / 90/ 90	- /120/120	- /120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES and COLUMNS-				
	90/ - / -	120/ - / -	180/ - / -	240/ - / -
FLOORS				
	90/ 90/ 90	120/120/120	180/180/180	240/240/240
ROOFS				
	90/ 60/ 30	120/ 60/ 30	180/ 60/ 30	240/ 90/ 60

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*Deemed-to-Satisfy Provisions***3.2 Concessions for floors**

A floor need not comply with Table 3 if-

- (a) it is laid directly on the ground; or
- (b) in a Class 2, 3, 5 or 9 building, the space below is not a *storey*, does not accommodate motor vehicles, is not a storage or work area, and is not used for any other ancillary purpose; or
- (c) it is a timber *stage* floor in a Class 9b building laid over a floor having the *required* FRL and the space below the *stage* is not used as a dressing room, store room, or the like; or
- (d) it is within a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part; or
- (e) it is an open-access floor (for the accommodation of electrical and electronic services and the like) above a floor with the *required* FRL.

3.3 Floor loading of Class 5 and 9b buildings: Concession

If a floor in a Class 5 or 9b building is designed for a live load not exceeding 3 kPa-

- (a) the floor next above (including floor beams) may have an FRL of 90/90/90; or
- (b) the roof, if that is next above (including roof beams) may have an FRL of 90/60/30.

3.4 Roof superimposed on concrete slab: Concession

A roof superimposed on a concrete slab roof need not comply with Clause 3.1 as to *fire-resisting construction* if-

- (a) the superimposed roof and any construction between it and the concrete slab roof are *non-combustible* throughout; and
- (b) the concrete slab roof complies with Table 3.

3.5 Roof: Concession

A roof need not comply with Table 3 if its covering is *non-combustible* and the building-

- (a) has a sprinkler system complying with Specification E1.5 installed throughout; or
- (b) has a *rise in storeys* of 3 or less; or

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- (c) is of Class 2 or 3; or
- (d) has an *effective height* of not more than 25 m and the ceiling immediately below the roof has a *resistance to the incipient spread of fire* to the roof space of not less than 60 minutes.

3.6 Rooflights

If a roof is *required* to have an FRL or its covering is *required* to be *non-combustible*, rooflights or the like installed in that roof must-

- (a) have an aggregate area not more than 20% of the roof surface; and
- (b) be not less than 3 m from-
 - (i) any boundary of the allotment other than the boundary with a road or public place; and
 - (ii) any part of the building which projects above the roof unless that part has the FRL *required* of a *fire wall* and any openings in that part of the wall for 6 m vertically above the rooflight or the like are protected in accordance with C3.4; and
 - (iii) any rooflight or the like in an adjoining *sole-occupancy unit* if the walls bounding the unit are *required* to have an FRL; and
 - (iv) any rooflight or the like in an adjoining fire-separated section of the building; and
- (c) if a ceiling with a *resistance to the incipient spread of fire* is *required*, be installed in a way that will maintain the level of protection provided by the ceiling to the roof space.

3.7 Internal columns and walls: Concession

For a building with an *effective height* of not more than 25 m and having a roof without an FRL in accordance with Clause 3.5, in the *storey* immediately below that roof, internal columns other than those referred to in Clause 3.1(f) and *loadbearing internal walls* other than *fire walls* may have-

- (a) in a Class 2 or 3 building : FRL 60/60/60; or
- (b) in a Class 5, 6, 7, 8 or 9 building-
 - (i) with *rise in storeys* exceeding 3 : FRL 60/60/60
 - (ii) with *rise in storeys* not exceeding 3 : no FRL.

*Deemed-to-Satisfy Provisions***3.8 Open spectator stands and indoor sports stadiums: Concession**

In an *open spectator stand* or indoor sports stadium, the following building elements need not have the FRL specified in Table 3 :

- (a) The roof if it is *non-combustible*.
- (b) Columns and *loadbearing* walls supporting only the roof if they are *non-combustible*.
- (c) Any non-*loadbearing* part of an *external wall* less than 3 m-
 - (i) from any *fire-source feature* to which it is exposed if it has an FRL of not less than - /60/60 and is *non-combustible*; or
 - (ii) from an *external wall* of another *open spectator stand* if it is *non-combustible*.

3.9 Carparks

- (a) Notwithstanding Clause 3.1, a *carpark* may comply with Table 3.9 if it is an *open-deck carpark* or is protected with a sprinkler system complying with Specification E1.5 and is-
 - (i) a separate building; or
 - (ii) a part of a building, and if occupying only part of a *storey*, is separated from the remaining part by a *fire wall*.
- (b) For the purposes of this clause, a *carpark*-
 - (i) includes-
 - (A) an administration area associated with the functioning of the *carpark*; and
 - (B) where the *carpark* is sprinklered, is associated with a Class 2 or 3 building and provides carparking for separate *sole-occupancy units*, each carparking area with an area not greater than 10% of its *floor area* for purposes ancillary to the *sole-occupancy units*; but
 - (ii) excludes-
 - (A) except for (b)(i), any area of another classification, or other part of a Class 7 building not used for carparking; and
 - (B) a building or part of a building specifically intended for the parking of trucks, buses, vans and the like.

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Table 3.9 REQUIREMENTS FOR CARPARKS	
Building element	FRL (not less than) <i>Structural adequacy/Integrity/ Insulation</i> ESA/M (not greater than)
Wall	
(a) <i>external wall</i>	
(i) less than 3 m from a <i>fire-source feature</i> to which it is exposed:	
<i>Loadbearing</i>	60/60/60
<i>Non-loadbearing</i>	- /60/60
(ii) 3 m or more from a <i>fire-source feature</i> to which it is exposed	- / - / -
(b) <i>internal wall</i>	
(i) <i>loadbearing</i> other than one supporting only the roof (not used for carparking)	60/ - / -
(ii) supporting only the roof (not used for carparking)	- / - / -
(iii) <i>non-loadbearing</i>	- / - / -
(c) <i>fire wall</i>	
(i) from the direction used as a <i>carpark</i>	60/60/60
(ii) from the direction not used as a <i>carpark</i>	as required by Table 3
Column	
(a) supporting only the roof (not used for carparking) and 3 m or more from a <i>fire-source feature</i> to which it is exposed	- / - / -
(b) steel column, other than one covered by (a) and one that does not support a part of a building that is not used as a <i>carpark</i>	60/ - / - or 26 m ² /tonne
(c) any other column not covered by (a) or (b)	60/ - / -
Beam	
(a) steel floor beam in continuous contact with a concrete floor slab	60/ - / - or 30 m ² /tonne
(b) any other beam	60/ - / -
Lift and stair shaft (within the <i>carpark</i> only)	60/60/60
Floor slab and vehicle ramp	60/60/60
Roof (not used for carparking)	- / - / -
Notes: 1. ESA/M means the ratio of exposed surface area to mass per unit length.	
2. Refer to Specification E1.5 for special requirements for a sprinkler system in a <i>carpark</i> complying with Table 3.9 and located within a multi-classified building.	

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*Deemed-to-Satisfy Provisions***3.10 Class 2 buildings: Concession**

- (a) A Class 2 building having a *rise in storeys* of not more than 3 may be constructed using-
- (i) timber framing throughout; or
 - (ii) *non-combustible* material throughout; or
 - (iii) a combination of (i) and (ii),
provided-
 - (iv) any *fire wall* or *internal wall* required to be *fire-resisting* that extends to the underside of the *non-combustible* roof covering is, except for roof battens with dimensions of 75 mm x 50 mm or less, not crossed by timber or other *combustible* building elements; and
 - (v) any insulation installed in the cavity of a wall *required* to have an FRL is *non-combustible*, and
 - (vi) the building is fitted with an *automatic* smoke alarm system complying with Specification E2.2a.
- (b) A Class 2 building having a *rise in storeys* of not more than 4 may have the top three *storeys* constructed in accordance with (a) provided the lowest *storey* is used solely for the purpose of parking motor vehicles or for some other ancillary purpose and the construction of that *storey*, including the floor between it and the *storey* above, is of concrete or masonry.
- (c) In a Class 2 building complying with (a) or (b) and fitted with a sprinkler system complying with Specification E1.5, any FRL criterion prescribed in Table 3-
- (i) for any floor and any *loadbearing wall*, may be reduced to 60, except any FRL criterion of 90 for an *external wall* must be maintained when tested from the outside; and
 - (ii) for any non-*loadbearing internal wall*, need not apply if-
 - (A) it is lined on each side with 13 mm standard grade plasterboard or similar *non-combustible* material; and
 - (B) it extends-
 - (aa) to the underside of the floor next above; or
 - (bb) to the underside of a ceiling with a *resistance to the incipient spread of fire* of 60 minutes; or

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- (cc) to the underside of a *non-combustible* roof covering; and
- (C) any insulation installed in the cavity of the wall is *non-combustible*; and
- (D) any construction joint, space or the like between the top of the wall and the floor, ceiling or roof is smoke sealed with intumescent putty or other suitable material; and
- (E) any doorway in the wall is protected by a *self-closing*, tight fitting, solid core door not less than 35 mm thick.

4. TYPE B FIRE-RESISTING CONSTRUCTION**4.1 Fire-resistance of building elements**

In a building *required* to be of Type B construction-

- (a) each building element listed in Table 4, and any beam or column incorporated in it, must have an FRL not less than that listed in the Table for the particular Class of building concerned; and
- (b) the *external walls, common walls*, and the flooring and floor framing in any lift pit, must be *non-combustible*; and
- (c) if a stair *shaft* supports any floor or a structural part of it-
 - (i) the floor or part must have an FRL of 60/-/- or more; or
 - (ii) the junction of the stair *shaft* must be constructed so that the floor or part will be free to sag or fall in a fire without causing structural damage to the *shaft*; and
- (d) any *internal wall* which is *required* to have an FRL, except a wall that bounds a *sole-occupancy unit* in the topmost (or only) *storey* and there is only one unit in that *storey*, must extend to-
 - (i) the underside of the floor next above if that floor has an FRL of at least 30/30/30; or
 - (ii) the underside of a ceiling having a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or

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- (iii) the underside of the roof covering if it is *non-combustible* and, except for roof battens with dimensions of 75 mm x 50 mm or less, must not be crossed by timber or other *combustible* building elements; or
- (iv) 450 mm above the roof covering if it is *combustible*, and;
- (e) a *loadbearing internal wall* and a *loadbearing fire wall* (including those that are part of a *loadbearing shaft*) must be of concrete or masonry; and
- (f) a *non-loadbearing internal wall required to be fire-resisting* must be of *non-combustible* construction; and
- (g) in a Class 5, 6, 7, 8 or 9 building, in the *storey* immediately below the roof, internal columns and walls other than *fire walls* and *shaft walls*, need not comply with Table 4; and
- (h) lift, subject to C2.10, ventilating, pipe, garbage, and similar *shafts* which are not for the discharge of hot products of combustion and not *loadbearing*, must be of *non-combustible* construction in-
 - (i) a Class 2, 3 or 9 building; and
 - (ii) a Class 5, 6, 7 or 8 building if the *shaft* connects more than 2 *storeys*; and
- (i) in a Class 2 or 3 building, except where within the one *sole-occupancy unit*, or a Class 9 building, a floor separating *storeys* or above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, must-
 - (i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or
 - (ii) have a *fire-protective covering* on the underside of the floor, including beams incorporated in it, if the floor is *combustible* or of metal, or has an FRL not less than 30/30/30.

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Table 4 TYPE B CONSTRUCTION: FRL OF BUILDING ELEMENTS				
Building element	Class of building - FRL: (in minutes) <i>Structural adequacy/Integrity/Insulation</i>			
	2, 3 or 4 part	5, 9 or 7 carpark	6	7 (other than a carpark) or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any <i>fire-source feature</i> to which it is exposed is -				
For <i>loadbearing</i> parts-				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 30	120/ 90/ 60	180/120/ 90	240/180/120
3 to less than 9 m	90/ 30/ 30	120/ 30/ 30	180/ 90/ 60	240/ 90/ 60
9 to less than 18 m	90/ 30/ -	120/ 30/ -	180/ 60/ -	240/ 60/ -
18 m or more	- / - / -	- / - / -	- / - / -	- / - / -
For <i>non-loadbearing</i> parts-				
less than 1.5 m	- / 90/ 90	- /120/120	- /180/180	- /240/240
1.5 to less than 3 m	- / 60/ 30	- / 90/ 60	- /120/ 90	- /180/120
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
EXTERNAL COLUMN not incorporated in an <i>external wall</i> , where the distance from any <i>fire-source feature</i> to which it is exposed is -				
less than 3 m	90/ - / -	120/ - / -	180/ - / -	240/ - / -
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
COMMON WALLS and FIRE WALLS -				
	90/ 90/ 90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS-				
<i>Fire-resisting lift and stair shafts-</i>				
<i>Loadbearing</i>	90/ 90/ 90	120/120/120	180/120/120	240/120/120
<i>Fire-resisting stair shafts</i>				
<i>Non-loadbearing</i>	- / 90/ 90	- /120/120	- /120/120	- /120/120
Bounding <i>public corridors</i> , public hallways and the like-				
<i>Loadbearing</i>	60/ 60/ 60	120/ - / -	180/ - / -	240/ - / -
<i>Non-loadbearing</i>	- / 60/ 60	- / - / -	- / - / -	- / - / -
Between or bounding <i>sole-occupancy units-</i>				
<i>Loadbearing</i>	60/ 60/ 60	120/ - / -	180/ - / -	240/ - / -
<i>Non-loadbearing</i>	- / 60/ 60	- / - / -	- / - / -	- / - / -
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES and COLUMNS-				
	60/ - / -	120/ - / -	180/ - / -	240/ - / -
ROOFS	- / - / -	- / - / -	- / - / -	- / - / -

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*Deemed-to-Satisfy Provisions***4.2 Carparks**

- (a) Notwithstanding Clause 4.1, a *carpark* may comply with Table 4.2 if it is an *open-deck carpark* or is protected with a sprinkler system complying with Specification E1.5 and is-
- (i) a separate building; or
 - (ii) a part of a building, and if occupying only part of a *storey*, is separated from the remaining part by a *fire wall*.
- (b) For the purposes of this clause, a *carpark*-
- (i) includes-
 - (A) an administration area associated with the functioning of the *carpark*; and
 - (B) where the *carpark* is sprinklered, is associated with a Class 2 or 3 building and provides carparking for separate *sole-occupancy units*, each carparking area with an area not greater than 10% of its *floor area* for purposes ancillary to the *sole-occupancy units*; but
 - (ii) excludes-
 - (A) except for (b)(i), any area of another classification, or other part of a Class 7 building not used for carparking; and
 - (B) a building or part of a building specifically intended for the parking of trucks, buses, vans and the like.

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Table 4.2 REQUIREMENTS FOR CARPARKS	
Building element	FRL (not less than) <i>Structural adequacy/Integrity/ Insulation</i> ESA/M (not greater than)
Wall	
(a) <i>external wall</i>	
(i) less than 3 m from a <i>fire-source feature</i> to which it is exposed:	
<i>Loadbearing</i>	60/60/60
<i>Non-loadbearing</i>	- /60/60
(ii) 3 m or more from a <i>fire-source feature</i> to which it is exposed	- / - / -
(b) <i>internal wall</i>	
(i) <i>loadbearing</i> other than one supporting only the roof (not used for carparking)	60/ - / -
(ii) supporting only the roof (not used for carparking)	- / - / -
(iii) <i>non-loadbearing</i>	- / - / -
(c) <i>fire wall</i>	
(i) from the direction used as a <i>carpark</i>	60/60/60
(ii) from the direction not used as a <i>carpark</i>	as required by Table 4
Column	
(a) supporting only the roof (not used for carparking) and 3 m or more from a <i>fire-source feature</i> to which it is exposed	- / - / -
(b) steel column, other than one covered by (a)	60/ - / - or 26 m ² /tonne
(c) any other column not covered by (a) or (b)	60/ - / -
Beam	
(a) less than 3 m from a <i>fire source feature</i> :	
(i) steel floor beam in continuous contact with a concrete floor slab	60/ - / - or 30 m ² /tonne
(ii) any other beam	60/ - / -
(b) 3 m or more from a <i>fire source feature</i>	- / - / -
Lift and stair shaft	
	- / - / -
Roof, floor slab and vehicle ramp	
	- / - / -
Note: ESA/M means the ratio of exposed surface area to mass per unit length.	

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*Deemed-to-Satisfy Provisions***4.3 Class 2 buildings: Concession**

- (a) A Class 2 building having a *rise in storeys* of not more than 2 may be constructed using-
- (i) timber framing throughout; or
 - (ii) *non-combustible* material throughout; or
 - (iii) a combination of (i) and (ii), provided-
 - (iv) any *fire wall* or *internal wall* required to be *fire-resisting* that extends to the underside of the *non-combustible* roof covering is, except for roof battens with dimensions of 75 mm x 50 mm or less, not crossed by timber or other *combustible* building elements; and
 - (v) any insulation installed in the cavity of a wall *required* to have an FRL is *non-combustible*; and
 - (vi) the building is fitted with an *automatic* smoke alarm system complying with Specification E2.2a.
- (b) In a Class 2 building complying with (a) and fitted with a sprinkler system complying with Specification E1.5, any FRL criterion prescribed in Table 4-
- (i) for any *loadbearing* wall, may be reduced to 60, except any FRL criterion of 90 for an *external wall* must be maintained when tested from the outside; and
 - (ii) for any *non-loadbearing internal wall*, need not apply, if-
 - (A) it is lined on both sides with 13 mm standard grade plasterboard or similar *non-combustible* material; and
 - (B) it extends-
 - (aa) to the underside of the floor next above if that floor has an FRL of at least 30/30/30 or is lined on the underside with a *fire-protective covering*; or
 - (bb) to the underside of a ceiling with a *resistance to the incipient spread of fire* of 60 minutes; or
 - (cc) to the underside of a *non-combustible* roof covering; and
 - (C) any insulation installed in the cavity of the wall is *non-combustible*; and

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- (D) any construction joints, spaces and the like between the top of the wall and the floor, ceiling or roof is smoke sealed with intumescent putty or other suitable material.

5 TYPE C FIRE-RESISTING CONSTRUCTION

5.1 Fire-resistance of building elements

In a building *required* to be of Type C construction-

- (a) a building element listed in Table 5 and any beam or column incorporated in it, must have an FRL not less than that listed in the Table for the particular Class of building concerned; and
- (b) an *external wall* that is *required* by Table 5 to have an FRL need only be tested from the outside to satisfy the requirement; and
- (c) a *fire wall* or an *internal wall* bounding a *sole-occupancy unit* or separating adjoining units must comply with Specification C1.8 if it is of *lightweight construction*; and
- (d) in a Class 2 or 3 building, an *internal wall* which is *required* by Table 5 to have an FRL must extend-
- (i) to the underside of the floor next above if that floor has an FRL of at least 30/30/30 or a *fire-protective covering* on the underside of the floor; or
 - (ii) to the underside of a ceiling having a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or
 - (iii) to the underside of the roof covering if it is *non-combustible*, and except for roof battens with dimensions of 75 mm x 50 mm or less, must not be crossed by timber or other *combustible* building elements; or
 - (iv) 450 mm above the roof covering if it is *combustible*; and
- (e) in a Class 2 or 3 building, except where within the one *sole-occupancy unit*, or a Class 9 building, a floor separating *storeys*, or above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, and any column supporting the floor, must-
- (i) have an FRL of at least 30/ 30/ 30; or

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- (ii) have a *fire-protective covering* on the underside of the floor including beams incorporated in it and around the column, if the floor or column is *combustible* or of metal.

**Table 5
TYPE C CONSTRUCTION: FRL OF BUILDING ELEMENTS**

Building element	Class of building - FRL: (in minutes) <i>Structural adequacy/Integrity/Insulation</i>			
	2, 3 or 4 part	5 or 9 or 7 <i>carpark</i>	6	7 (other than a <i>carpark</i>) or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any <i>fire-source feature</i> to which it is exposed is -				
less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	- / - / -	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
EXTERNAL COLUMN not incorporated in an <i>external wall</i> , where the distance from any <i>fire-source feature</i> to which it is exposed is -				
less than 1.5 m	90/ - / -	90/ - / -	90/ - / -	90/ - / -
1.5 to less than 3 m	- / - / -	60/ - / -	60/ - / -	60/ - / -
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
COMMON WALLS and FIRE WALLS -				
	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS-				
Bounding <i>public corridors</i> , public hallways and the like-	60/ 60/ 60	- / - / -	- / - / -	- / - / -
Between or bounding <i>sole-occupancy units-</i>	60/ 60/ 60	- / - / -	- / - / -	- / - / -
Bounding a stair if <i>required</i> to be rated-	60/ 60/ 60	- / - / -	- / - / -	- / - / -
ROOFS	- / - / -	- / - / -	- / - / -	- / - / -

5.2 Carparks

- (a) Notwithstanding Clause 5.1, a *carpark* may comply with Table 5.2 if it is an *open-deck carpark* or is protected with a sprinkler system complying with Specification E1.5 and is-
 - (i) a separate building; or
 - (ii) a part of a building, and if occupying only part of a *storey*, is separated from the remaining part by a *fire wall*.

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- (b) For the purposes of this clause, a *carpark*-
- (i) includes-
 - (A) an administration area associated with the functioning of the *carpark*; and
 - (B) where the *carpark* is sprinklered, is associated with a Class 2 or 3 building and provides carparking for separate *sole-occupancy units*, each carparking area with an area not greater than 10% of its *floor area* for purposes ancillary to the *sole-occupancy units*; but
 - (ii) excludes-
 - (A) except for (b)(i), any area of another classification, or other part of a Class 7 building not used for carparking; and
 - (B) a building or part of a building specifically intended for the parking of trucks, buses, vans and the like.

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Table 5.2 REQUIREMENTS FOR CARPARKS	
Building element	FRL (not less than) <i>Structural adequacy/Integrity/ Insulation</i> ESAM (not greater than)
Wall	
(a) <i>external wall</i>	
(i) less than 1.5 m from a <i>fire-source feature</i> to which it is exposed:	
<i>Loadbearing</i>	60/60/60
<i>Non-loadbearing</i>	- /60/60
(ii) 1.5 m or more from a <i>fire-source feature</i> to which it is exposed	- / - / -
(b) <i>internal wall</i>	- / - / -
(c) <i>fire wall</i>	
(i) from the direction used as a <i>carpark</i>	60/60/60
(ii) from the direction not used as a <i>carpark</i>	90/90/90
Column	
(a) steel column less than 1.5 m from a <i>fire-source feature</i>	60/ - / - or 26 m ² /tonne
(b) any other column less than 1.5 m from a <i>fire-source feature</i>	60/ - / -
(c) any other column not covered by (a) or (b)	- / - / -
Beam	
(a) less than 1.5 m from a <i>fire-source feature</i>	
(i) steel floor beam in continuous contact with a concrete floor slab	60/ - / - or 30 m ² /tonne
(ii) any other beam	60/ - / -
(b) 1.5 m or more from a <i>fire-source feature</i>	- / - / -
Roof, floor slab and vehicle ramp	
	- / - / -
Note: ESA/M means the ratio of exposed surface area to mass per unit length.	

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SPECIFICATION **C1.8** STRUCTURAL TESTS FOR LIGHTWEIGHT CONSTRUCTION

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1. Scope

This Specification describes tests to be applied to and criteria to be satisfied by a wall system of *lightweight construction*.

2. Application

A wall system need not be tested in accordance with this Specification for static pressure or impact if it is designed and constructed in accordance with the deemed-to-satisfy provisions of Section B to resist the appropriate pressures and impacts defined in this Specification.

3. Tests

3.1 Walls of certain Class 9b buildings

Lightweight construction forming-

- (a) a wall of a lift *shaft* and stair *shaft*, and
- (b) an *external* and *internal wall* bounding a *public corridor*, public hallway or the like, including a *fire-isolated* and non *fire-isolated passageway* or *ramp*,

in a spectator stand, sports stadium, cinema or theatre, railway or bus station or airport terminal, must be subjected to the following tests and must fulfil the following criteria:

- (i) The materials tests of Clause 5(a) and the criteria of Clause 6(a).
- (ii) A static test by the imposition of a uniformly distributed load of 1.0 kPa (or its equivalent) in accordance with Clause 5(b) and the damage and deflection criteria of Clauses 6(b) and (c) respectively.
- (iii) A dynamic test by the fall of the impact bag through a height of 350 mm in accordance with Clause 5(c) and the damage and deflection criteria of Clauses 6(b) and (d) respectively.
- (iv) The surface indentation test of Clause 5(d) and the surface indentation criterion of Clause 6(e).

*Deemed-to-Satisfy Provisions***3.2 Walls of shafts and fire-isolated exits generally**

8A wall of *lightweight construction* that is *required* to be *fire-resisting* and which bounds a lift *shaft*, stair *shaft*, or service *shaft*, *fire-isolated passageway* or *fire-isolated ramp* must be subjected to the following tests and must fulfil the following criteria:

- (a) The materials tests of Clause 5(a) and the criteria of Clause 6(a).
- (b) A static test by the imposition of a uniformly distributed load of 0.35 kPa (or its equivalent) in accordance with Clause 5(b) and the damage and deflection criteria of Clauses 6(b) and (c) respectively.
- (c) A dynamic test by the fall of the impact bag through a height of 150 mm in accordance with Clause 5(c) and the damage and deflection criteria of Clauses 6(b) and (d) respectively.
- (d) The surface indentation test of Clause 5(d) and the surface indentation criterion of Clause 6(e).

3.3 Additional requirements for lift shafts

- (a) In addition to the requirements of Clauses 3.1 and 3.2, a wall system for use in a lift *shaft* that is *required* to be *fire-resisting* must be subjected to dynamic test by the imposition of-
 - (i) where the lift car speed is 7 m/s or less - 10^6 cycles of a uniformly distributed load between 0 and 0.2 kPa (or its equivalent); or
 - (ii) where the lift car speed is greater than 7 m/s - 10^6 cycles of a uniformly distributed load between 0 and 0.35 kPa (or its equivalent) in accordance with Clause 5(e) and must fulfil the damage criteria of Clause 6(b).
- (b) The wall system must be subjected to the static test in accordance with Clause 3.2(b) after the successful conclusion of the dynamic test specified in (a).

3.4 Walls generally

An *external* and *internal wall* of *lightweight construction* that is *required* to be *fire-resisting*, other than one covered by Clauses 3.1, 3.2 or 3.3, must be subjected to the following tests and must fulfil the following criteria:

- (a) The materials tests of Clause 5(a) and the criteria of Clause 6(a).

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- (b) A static test by the imposition of a uniformly distributed load of 0.25 kPa (or its equivalent) in accordance with Clause 5(b) and the damage and deflection criteria of Clauses 6(b) and (c) respectively.
- (c) A dynamic test by fall of the impact bag through a height of 100 mm in accordance with Clause 5(c) and the damage and deflection criteria of Clauses 6(b) and (d) respectively.
- (d) The surface indentation test of Clause 5(d) and the surface indentation criterion of Clause 6(e).

4. Test specimens**4.1 General**

Testing must be carried out on either-

- (a) construction in situ; or
- (b) a laboratory specimen of the construction.

4.2 Testing in situ

If testing is carried out in situ, it must be done on that part of the construction least likely, because of the particular combination of the height of the walls, the support conditions and other aspects of the construction, to resist the loads.

4.3 Testing of specimens

If a laboratory specimen is tested, the specimen must span only in the direction corresponding to the height of the wall and testing must be done in accordance with either (a) or (b) below:

- (a) (i) The height of the test specimen (or length, if the specimen is tested horizontally) must be identical with the height between supports in the actual construction; and
- (ii) the specimen must be supported at the top and bottom (or at each end if tested horizontally) by components identical with, and in a manner identical with, the actual construction.
- (b) If the distance between supports of the actual construction is more than 3 m, then a smaller specimen may be tested but-
 - (i) the distance between supports must be not less than 3 m; and

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- (ii) forces, reactions and support conditions must be modelled so as to reproduce the behaviour of the actual construction if it were tested in-situ.

5. Test methods

Tests must be carried out in accordance with the following:

- (a) **Material tests** - The methods specified for the constituent materials of the construction of the standards adopted by reference in the BCA.
- (b) **For resistance to static pressure** - The provisions for testing walls under transverse load in ASTM E72-80, except that-
 - (i) support conditions must be as specified in Clause 4.3; and
 - (ii) equivalent load shall mean the quarter-point load that produces the same deflection or central moment as appropriate.
- (c) **For resistance to impact** - The provisions for testing wall systems in ASTM E695-79 (1985), except that-
 - (i) the point of impact must be set 1.5 m above finished floor level or 1.5 m above the part of the specimen that corresponds to finished floor level; and
 - (ii) the impact bag must be not less than 225 mm in diameter and not more than 260 mm in diameter and have a mass of 27.2 kg (+ 0.1 kg, -0); and
 - (iii) the mass must be achieved by putting loose, dry sand into the bag and must be adjusted before each series of impact tests; and
 - (iv) where the impact bag and suspension cannot be vertical at the instant of impact on a curved surface or an inclined surface, the height of drop is the net height at the point of impact.
- (d) **For resistance to surface indentation** - For all materials irrespective of composition the test for surface hardness of Clause A2 of Appendix A of AS 2185.

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- (e) **For resistance of lift shaft construction to repetitive load** - As for 5(b) except that-
- (i) it is sufficient to test one specimen with the pressure applied from the side of the construction on which the lift will operate; and
 - (ii) the load must be applied dynamically at a frequency not less than 1 Hz and not more than 3 Hz; and
 - (iii) equivalent load shall mean the quarter-point load that produces the same central moment as the distributed load.

6. Criteria for compliance

The wall system or the specimen of it must fulfil the following criteria:

- (a) **Materials** - Materials must comply with the applicable standard adopted by reference in the BCA.
- (b) **Damage** - There must no crack, penetration or permanent surface-deformation to a depth of more than 0.5 mm or any other non-elastic deformation or fastener failure.
- (c) **Deflection - Static pressure** - Under static pressure the deflection must not be more than-
 - (i) 1/240th of the height between supports; or
 - (ii) for construction other than a lift *shaft* - 30 mm; or
 - (iii) for a lift *shaft* - 20 mm unless the requirements of Clause 15.2(a) of AS 1735.2 are fulfilled.
- (d) **Deflection - Impact** - Under impact the instantaneous deflection must not be more than-
 - (i) 1/120th of the height of the wall between supports; or
 - (ii) for construction other than a lift *shaft* - 30 mm; or
 - (iii) for a lift *shaft* - 20 mm unless the requirements of Clause 15.2(a) of AS 1735.2 are fulfilled.
- (e) **Surface indentation** - No impression must be more than 5 mm in diameter.

SPECIFICATION **C1.10** FIRE HAZARD PROPERTIES

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1. Scope

This Specification sets out requirements in relation to the fire hazard properties of materials, linings and surface finishes in buildings.

2. Class 2 to 9 buildings: General requirements

Except where superseded by Clause 3 or 4, any material or component used in a Class 2, 3, 5, 6, 7, 8, or 9 building must-

- (a) in the case of a *sarking-type material*, have a *Flammability Index* not more than 5; or
- (b) in the case of other materials, have-
 - (i) a *Spread-of-Flame Index* not more than 9; and
 - (ii) a *Smoke-Developed Index* not more than 8 if the *Spread-of-Flame Index* is more than 5; or
- (c) be completely covered on all faces by concrete or masonry not less than 50 mm thick; or
- (d) in the case of a composite member or assembly, be constructed so that when assembled as proposed in a building-
 - (i) any material which does not comply with (a) or (b) is protected on all sides and edges from exposure to the air; and
 - (ii) the member or assembly, when tested in accordance with Specification A2.4, has a *Smoke-Developed Index* and a *Spread-of-Flame Index* not exceeding those prescribed in (b); and
 - (iii) the member or assembly retains the protection in position so that it prevents ignition of the material and continues to screen it from access to free air for a period of not less than 10 minutes.

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*Deemed-to-Satisfy Provisions***3. Fire-isolated exits**

In a *fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp* in a Class 2 to 9 building-

- (a) a material, other than a *sarking-type material* used in a ceiling or used as a finish, surface, lining or attachment, must have a-
 - (i) *Spread-of-Flame Index* of 0; and
 - (ii) *Smoke-Developed Index* of not more than 2; and
 - (iii) if *combustible*, be attached directly to a *non-combustible* substrate and not exceed 1 mm in finished thickness; and
- (b) a *sarking-type material* used in the form of an exposed wall or ceiling, or as a finish or attachment thereto, must have a *Flammability Index* of 0.

4. Class 2, 3 and 9 buildings

A material, other than a *sarking-type material* must if-

- (a) in a Class 2, 3, 9a or 9b building, it is used as a finish, surface, lining or attachment to any wall or ceiling in a *public corridor* which is a means of egress to-
 - (i) a *required fire-isolated stairway* or an external stairway used instead; or
 - (ii) a *required fire-isolated passageway, or required fire-isolated ramp,*
 have a *Spread-of-Flame Index* of 0 and a *Smoke-Developed Index* of not more than 5; or
- (b) in a Class 9a building in a *patient-care area*, it is used as a finish, surface, lining or attachment to a-
 - (i) ceiling - have a *Spread-of-Flame Index* of 0 and a *Smoke-Developed Index* of not more than 3; and
 - (ii) wall - have a *Spread-of-Flame Index* of not more than 2 and a *Smoke-Developed Index* of not more than 5, except that skirtings of up to 150 mm above the floor may be considered as, and have the Early Fire Hazard Indices of, the floor covering; and
 - (iii) floor - have a-
 - (A) *Spread-of-Flame Index* of not more than 3 and a *Smoke-Developed Index* of not more than 5; or

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- (B) *Spread-of-Flame Index* of 0 and a *Smoke-Developed index* of not more than 6; or
- (c) in a Class 9b building not protected by a sprinkler system used as a theatre or public hall, in the auditorium or audience seating area, it is used as a finish, surface, lining or attachment to a-
 - (i) ceiling - have a *Spread-of-Flame Index* of not more than 6 and a *Smoke-Developed Index* of not more than 3; and
 - (ii) wall - have a *Spread-of-Flame Index* of not more than 6 and a *Smoke-Developed Index* of not more than 5; and
 - (iii) floor - have a *Spread-of-Flame Index* of not more than 7 and a *Smoke-Developed Index* of not more than 5, except where the auditorium is used mainly for-
 - (A) indoor swimming or ice skating - have a *Spread-of-Flame Index* of not more than 9 and a *Smoke-Developed Index* of not more than 8; or
 - (B) other indoor sports or multi-purpose functions - have a *Spread-of-Flame Index* of not more than 8 and a *Smoke-Developed Index* of not more than 7; or
- (d) in a Class 9b building used as a theatre or public hall, it is used in any part of fixed seating in the audience area or auditorium have a *Spread-of-Flame Index* of 0 and a *Smoke-Developed Index* of not more than 5.

NSW Spec C1.10 4(d)

5. Materials deemed to comply

A material complies with Clauses 2, 3 or 4 if it is-

- (a) plaster, cement render, concrete, terrazzo, ceramic tile or the like; or
- (b) a *fire-protective covering*.

NSW Spec C1.10 6

6. Fire-retardant coatings not acceptable

Paint or fire-retardant coatings must not be used in order to make a substrate comply with a *required Spread-of-Flame Index*, *Smoke-Developed Index* or *Flammability Index*.

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*Deemed-to-Satisfy Provisions***7. Exempted building parts and materials**

The requirements in this Specification for a *Spread-of-Flame Index*, *Smoke-Developed Index* or *Flammability Index* do not apply to-

- (a) timber-framed *windows*; or
- (b) solid timber handrails or skirtings; or
- (c) timber-faced solid-core or fire doors; or
- (d) electrical switches, outlets, cover plates or the like; or
- (e) materials used for-
 - (i) roof covering or membranes, or roof insulating material, applied in continuous contact with a substrate; or
 - (ii) adhesives; or
 - (iii) damp-proof courses, flashing, caulking, sealing, ground moisture barriers, or the like; or
- (f) paint, varnish, lacquer or similar finish, other than nitro-cellulose lacquer; or
- (g) a clear or translucent rooflight of glass fibre reinforced polyester if-
 - (i) the roof in which it is installed forms part of a single *storey* building *required* to be of Type C construction; and
 - (ii) the material is used as part of the roof covering; and
 - (iii) it is not closer than 1.5 m from another rooflight of the same type; and
 - (iv) each rooflight is not more than 14 m² in area; and
 - (v) the area of the rooflights per 70 m² of roof surface is not more than 14 m²; or
- (h) the face plates and neck adaptors of supply and return air outlets of air-handling systems; or
- (i) the face plates or diffuser plates of light fittings and emergency *exit* signs and associated electrical wiring and electrical components; or
- (j) any other material that does not significantly increase the hazards of fire.

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8. Air-handling ductwork

Rigid and flexible ductwork in a Class 2 to 9 building must comply with the fire hazard properties set out in AS 4254.

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SPECIFICATION **C1.11** PERFORMANCE OF EXTERNAL WALLS IN FIRE

Deemed-to-Satisfy Provisions

1. Scope

This Specification contains measures to minimise, in the event of fire, the likelihood of *external walls* covered by Clause 2 collapsing outwards as complete panels and the likelihood of panels separating from supporting members.

2. Application

This Specification applies to buildings having a *rise in storeys* of not more than 2 with concrete *external walls* that could collapse as complete panels (eg. tilt-up and precast concrete) which-

- (a) consist of either single or multiple panels attached by steel connections to lateral supporting members; and
- (b) depend on those connections to resist outward movement of the panels relative to the supporting members; and
- (c) have height to thickness ratio not greater than 50.

3. General requirements for external wall panels

- (a) Cast-in inserts and fixings must be anchored into the panel with welded bars or be fixed to the panel reinforcement.
- (b) Cast-in inserts for top connections and fixings acting together must be able to resist an ultimate load of two times the larger of the forces *required* to develop-
 - (i) the ultimate bending moment capacity of the panel at its base; or
 - (ii) the overturning moment at the base of the panel arising from an outwards lateral displacement at the top of the panel equal to one tenth of the panel height.
- (c) Top connections of the panel exposed to fire, such as clips and drilled-in inserts, acting together must be able to resist an ultimate load of six times the larger of the forces *required* to develop the moment specified in (b)(i) or (ii).

Note. The increased forces specified by use of the multiplier of two or six in (b) and (c) above are to take account of the lower strength of the connections and members at the higher than ambient temperatures expected in a fire.

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- (d) Lateral supporting members and their connections must be designed to resist the connection forces specified in (b) and (c) and in the case of an eaves tie member the force in the member must be determined assuming that it deforms in a manner compatible with the lateral displacement of the wall panels, and that it acts in tension only.
- (e) *External wall* panels that span vertically must have at least two upper connections per panel to the supporting member, except that where a number of panels are designed to act as one unit, (eg. tongue and groove hollow-core panels), only two upper connections are *required* for each unit.
- (f) *External wall* panels that span horizontally between columns must have at least two connections at each column.

4. Additional requirements for vertically spanning external wall panels adjacent to columns

- (a) Where vertically spanning *external wall* panels are located adjacent to columns, connections to the panels must be located and/or detailed to minimise forces that may develop between the panels and columns arising from the restraint of differential displacement.
- (b) The requirements of (a) are satisfied by-
 - (i) detailing the connections and/or the supporting member to sustain a relative outward displacement of (d) between the panels and columns at the connection height where $d(m)$ is calculated as-
 - (A) the square of the connection height (m) divided by one hundred and twenty-five, when the connection height is less than 5 m; or
 - (B) the connection height (m) divided by twenty-five, when the connection height (m) is greater than or equal to 5 m; or
 - (ii) in situations where an eaves tie member is used to provide lateral support to *external wall* panels, the tie member is connected to the panels no closer than a distance (s) from the column where $s(m)$ is taken as one quarter of the panel height (m).

SPECIFICATION **C3.4** FIRE DOORS, SMOKE DOORS, FIRE WINDOWS AND SHUTTERS

Deemed-to-Satisfy Provisions

1. SCOPE

This Specification sets out requirements for the construction of fire doors, smoke doors, fire *windows* and fire shutters.

2. FIRE DOORS

A *required* fire door must-

- (a) comply with AS 1905.1; and
- (b) not fail by radiation through any glazed part during the period specified for *integrity* in the *required* FRL.

3. SMOKE DOORS

3.1 General requirements

Smoke doors must be constructed so that smoke will not pass from one side of the doorway to the other and, if they are glazed, there is minimal danger of a person being injured by accidentally walking into them.

3.2 Construction deemed-to-satisfy

A smoke door of one or two leaves satisfies 3.1 if it is constructed as follows:

- (a) The leaves are side-hung to swing-
 - (i) in the direction of egress; or
 - (ii) in both directions.
- (b) (i) The leaves are capable of resisting smoke at 200°C for 30 minutes.
 - (ii) Solid-core leaves at least 35 mm thick satisfy (i).
- (c) The leaves are fitted with smoke seals.
- (d) (i) The leaves are normally in the closed position; or

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- (ii) (A) The leaves are closed *automatically* with the *automatic* closing operation initiated by smoke detectors, installed in accordance with the relevant provisions of AS 1670, located on each side of the doorway not more than 1.5 m horizontal distance from the opening; and
 - (B) in the event of power failure to the door, the leaves fail-safe in the closed position.
- (e) The leaves return to the fully closed position after each manual opening.
- (f) Any glazing incorporated in the door complies with AS 1288.
- (g) (i) If a glazed panel is capable of being mistaken for an unobstructed *exit*, the presence of the glass must be identified by opaque construction.
- (ii) An opaque mid-height band, mid-rail or crash bar satisfies (i).

4. FIRE SHUTTERS

A *required* fire shutter must-

- (a) be a shutter that-
 - (i) is identical with a tested prototype that has achieved the *required* FRL; and
 - (ii) is installed in the same manner and in an opening that is not larger than the tested prototype; and
 - (iii) did not have a rise in average temperature on the side remote from the furnace of more than 140 K during the first 30 minutes of the test; or
- (b) is a steel shutter complying with AS 1905.2 if a metallic fire shutter is not prohibited by C3.5.

5. FIRE WINDOWS

A *required* fire window must be-

- (a) identical in construction with a prototype that has achieved the *required* FRL; and
- (b) installed in the same manner and in an opening that is not larger than the tested prototype.

SPECIFICATION **C3.15** PENETRATION OF WALLS, FLOORS AND CEILINGS BY SERVICES

Deemed-to-Satisfy Provisions

1. Scope

This Specification prescribes materials and methods of installation for services that penetrate walls, floors and ceilings *required* to have an FRL.

2. Application

- (a) This Specification applies to installations permitted under the deemed-to-satisfy provisions of the BCA as alternatives to systems that have been demonstrated by test to fulfil the requirements of C3.15(a).
- (b) This Specification does not apply to installations in ceilings *required* to have a *resistance to the incipient spread of fire* nor to the installation of piping that contains or is intended to contain a flammable liquid or gas.

3. Metal pipes

- (a) A metal pipe that is not normally filled with liquid must not penetrate a wall, floor or ceiling within 100 mm of any *combustible* material, and must be constructed of-
 - (i) copper alloy or stainless steel with a wall thickness of at least 1 mm; or
 - (ii) cast iron or steel (other than stainless steel) with a wall thickness of at least 2 mm.
- (b) An opening for a metal pipe must-
 - (i) be neatly formed, cut or drilled; and
 - (ii) be no closer than 200 mm to any other service penetration; and
 - (iii) accommodate only one pipe.
- (c) A metal pipe must be wrapped but must not be lagged or enclosed in thermal *insulation* over the length of its penetration of a wall, floor or ceiling unless the lagging or thermal insulation fulfils the requirements of Clause 7.

Deemed-to-Satisfy Provisions

- (d) The gap between a metal pipe and the wall, floor or ceiling it penetrates must be fire-stopped in accordance with Clause 7.

4. Pipes penetrating sanitary compartments

If a pipe of metal or UPVC penetrates the floor of a *sanitary compartment* in accordance with C3.15(e) of the BCA-

- (a) the opening must be neatly formed and no larger than is necessary to accommodate the pipe or fitting; and
- (b) the gap between pipe and floor must be fire-stopped in accordance with Clause 7.

5. Wires and cables

If a wire or cable or cluster of wires or cables penetrates a floor, wall or ceiling-

- (a) the opening must be neatly formed, cut or drilled and no closer than 50 mm to any other service opening; and
- (b) the opening must be no larger in cross-sectional area than-
- (i) 2000 mm² if only a single cable is accommodated and the gap between cable and wall, floor or ceiling is no wider than 15 mm; or
 - (ii) 500 mm² in any other case; and
- (c) the gap between the service and the wall, floor or ceiling must be fire-stopped in accordance with Clause 7.

6. Electrical switches and outlets

If an electrical switch, outlet, socket or the like is accommodated in an opening or recess in a wall, floor or ceiling-

- (a) the opening or recess must not-
- (i) be located opposite any point within 300 mm horizontally or 600 mm vertically of any opening or recess on the opposite side of the wall; or
 - (ii) extend beyond half the thickness of the wall; and
- (b) the gap between the service and the wall, floor or ceiling must be fire-stopped in accordance with Clause 7.

*Deemed-to-Satisfy Provisions***7. Fire-stopping**

- (a) **Material:** The material used for the fire-stopping of service penetrations must be concrete, high-temperature mineral fibre, high-temperature ceramic fibre or other material that does not flow at a temperature below 1120°C when tested in accordance with AS 1038.15, and must have-
- (i) demonstrated in a system tested in accordance with C3.15(a) that it does not impair the *fire-resisting* performance of the building element in which it is installed; or
 - (ii) demonstrated in a test in accordance with (e) that it does not impair the *fire-resisting* performance of the test slab.
- (b) **Installation:** Fire-stopping material must be packed into the gap between the service and wall, floor or ceiling in a manner, and compressed to the same degree, as adopted for testing under Clause 7(a)(i) or (ii).
- (c) **Hollow construction:** If a pipe penetrates a hollow wall (such as a stud wall, a cavity wall or a wall of hollow blockwork) or a hollow floor/ceiling system, the cavity must be so framed and packed with fire-stopping material that the material is-
- (i) installed in accordance with Clause 7(b) to a thickness of 25 mm all round the service for the full length of the penetration; and
 - (ii) restrained, independently of the service, from moving or parting from the surfaces of the service and of the wall, floor or ceiling.
- (d) **Recesses:** If an electrical switch, socket, outlet or the like is accommodated in a recess in a hollow wall or hollow floor/ceiling system -
- (i) the cavity immediately behind the service must be framed and packed with fire-stopping material in accordance with Clause 7(c); or
 - (ii) the back and sides of the service must be protected with refractory lining board identical with and to the same thickness as that in which the service is installed.

Deemed-to-Satisfy Provisions

- (e) **Test:** The test to demonstrate compliance of a fire-stopping material with this Specification must be conducted as follows:
- (i) The test specimen must comprise a concrete slab not less than 1 m square and not more than 100 mm thick, and appropriately reinforced if necessary for *structural adequacy* during manufacture, transport and testing.
 - (ii) The slab must have a hole 50 mm in diameter through the centre and the hole must be packed with the fire-stopping material.
 - (iii) The slab must be conditioned in accordance with AS 1530.4.
 - (iv) Two thermocouples complying with AS 1530.4 must be attached to the upper surface of the packing each about 5 mm from its centre.
 - (v) The slab must be tested on flat generally in accordance with Section 10 of AS 1530.4 and must achieve an FRL of 60/60/60 or as otherwise *required*.

SECTION **D**

Amdt 0

ACCESS AND EGRESS

- D1 Provision for Escape
- D2 Construction of Exits
- D3 Access for People with Disabilities

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SECTION D ACCESS AND EGRESS

OBJECTIVE

- DO1** The objective of this Section is to-
- (a) provide, as far as is reasonable, people with safe, equitable and dignified access to-
 - (i) a building; and
 - (ii) the services and facilities within a building; and
 - (b) safeguard occupants from illness or injury while evacuating in an emergency.

FUNCTIONAL STATEMENTS

- DF1** A building is to provide, as far as is reasonable, safe, equitable and dignified access for people to the services and facilities within.
- DF2** A building is to be provided with means of evacuation which allow occupants time to evacuate safely without being overcome by the effects of an emergency.

Limitation:

DF2 does not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part.

PERFORMANCE REQUIREMENTS

- DP1** Access must be provided, to the degree necessary, to enable safe, equitable and dignified movement of people to and within buildings.

- DP2** So that people can move safely to and within a building, it must have-
- (a) walking surfaces with safe gradients; and
 - (b) any doors installed to avoid the risk of occupants-
 - (i) having their egress impeded; or
 - (ii) being trapped in the building; and
 - (c) any stairways and ramps with-
 - (i) slip-resistant walking surfaces on-
 - (A) ramps; and
 - (B) stairway treads or near the edge of the nosing; and
 - (ii) suitable handrails where necessary to assist and provide stability to people using the stairway or ramp; and
 - (iii) suitable landings to avoid undue fatigue; and
 - (iv) landings where a door opens from or onto the stairway or ramp so that the door does not create an obstruction; and
 - (v) in the case of a stairway, be suitable for safe passage in relation to the nature, volume and frequency of likely usage.
- DP3** Where people could fall 1 metre or more from a floor or roof or through an opening in the external envelope of a building, or due to a sudden change of level within or associated with a building, a barrier must be provided which must be-
- (a) continuous and extend for the full extent of the hazard; and
 - (b) of a height to protect people from accidentally falling from the floor or roof; and
 - (c) constructed to prevent people from falling through the barrier; and
 - (d) capable of restricting the passage of children; and
 - (e) of strength and rigidity to withstand-
 - (i) the foreseeable impact of people; and
 - (ii) where appropriate, the static pressure of people pressing against it.

Limitations:

DP3 does not apply where such a barrier would be incompatible with the intended use of an area such as a stage, loading dock or the like.

DP3(d) does not apply to-

- (a) *fire-isolated stairways, fire-isolated ramps*, and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and
- (b) Class 7 (other than *carparks*) and Class 8 buildings and parts of buildings containing those classes.

DP4 *Exits* must be provided from a building to allow occupants to evacuate safely, with their number, location and dimensions being appropriate to-

- (a) the travel distance; and
- (b) the number, mobility and other characteristics of occupants; and
- (c) the function or use of the building; and
- (d) the height of the building; and
- (e) whether the *exit* is from above or below ground level.

DP5 *Exits* must be fire isolated, to the degree necessary, appropriate to-

- (a) the number of *storeys* connected by the *exits*; and
- (b) the *fire safety system* installed in the building; and
- (c) the function or use of the building; and
- (d) the number of *storeys* passed through by the *exits*; and
- (e) *fire brigade* intervention.

DP6 So that occupants can safely evacuate the building, paths of travel to *exits* must have dimensions appropriate to-

- (a) the number, mobility and other characteristics of occupants; and
- (b) the function or use of the building.

Limitation:

DP6 does not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part.

- DP7** Accessways must be provided, as far as is reasonable, to and within buildings which-
- (a) have features to enable people with disabilities to safely, equitably and with dignity-
 - (i) approach the building from the road boundary and from any carparking spaces associated with the building; and
 - (ii) access work and public spaces, accommodation and facilities for personal hygiene; and
 - (b) are identified at appropriate locations and are easy to find; and
 - (c) enables a person in a wheelchair to manoeuvre.
- DP8** Carparking spaces for use by people with disabilities must be-
- (a) provided, to the degree necessary, to give equitable access for carparking; and
 - (b) designated and easy to find.

Limitation:

DP8 does not apply to a building where-

- (a) a parking service is provided; and
- (b) direct access to any carparking spaces by the general public or occupants is not available.

- DP9** A hearing augmentation-listening system suitable for use by people with a hearing impairment must be installed to augment any built-in amplifying system.

Application:

DP9 only applies to a Class 9b *assembly building*, other than a *school* or an *early childhood centre*.

PART D1 PROVISION FOR ESCAPE

Deemed-to-Satisfy Provisions

D1.0 Deemed-to-Satisfy Provisions

Performance Requirements DP1 to DP9 are satisfied by complying with-

- (a) D1.1 to D1.16, D2.1 to D2.23 and D3.1 to D3.7; and
- (b) in a building containing an *atrium*, Part G3; and
- (c) for theatres, *stages* and public halls, Part H1.

D1.1 Application of Part

The deemed-to-satisfy provisions of this Part do not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building.

D1.2 Number of exits required

- (a) **All buildings** - Every building must have at least one *exit* from each *storey*.
- (b) **Class 2 to 8 buildings** - In addition to any *horizontal exit*, not less than 2 *exits* must be provided from the following:
 - (i) Each *storey* if the building has an *effective height* of more than 25 m.
 - (ii) A Class 2 or 3 building subject to C1.5.
- (c) **Basements** - In addition to any *horizontal exit*, not less than 2 *exits* must be provided from any *storey* if egress from that *storey* involves a vertical rise within the building of more than 1.5 m, unless-
 - (i) the *floor area* of the *storey* is not more than 50 m²; and
 - (ii) the distance of travel from any point on the floor to a single *exit* is not more than 20 m.
- (d) **Class 9 buildings** - In addition to any *horizontal exit*, not less than 2 *exits* must be provided from the following:
 - (i) Each *storey* if the building has a *rise in storeys* of more than 6 or an *effective height* of more than 25 m.
 - (ii) Any *storey* which includes a *patient care area* in a Class 9a building.

Deemed-to-Satisfy Provisions

- (iii) Each *storey* in a Class 9b building used as an *early childhood centre*.
- (iv) Each *storey* in a primary or secondary *school* with a *rise in storeys* of 2 or more.
- (v) Any *storey* or *mezzanine* that accommodates more than 50 persons, calculated under D1.13.
- (e) **Exits from patient care areas** - In a Class 9a building, at least one *exit* must be provided from every part of a *storey* which has been divided into *fire compartments* in accordance with C2.5.
- (f) **Exits in open spectator stands** - In an *open spectator stand* containing more than one tier of seating, every tier must have not less than 2 stairways or ramps, each forming part of the path of travel to not less than 2 *exits*.
- (g) **Access to exits** - Without passing through another *sole-occupancy unit* every occupant of a *storey* or part of a *storey* must have access to-
 - (i) an *exit*, or
 - (ii) at least 2 *exits*, if 2 or more *exits* are *required*.

NSW D1.2(d)(vi)

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D1.3 When fire-isolated exits are required

- (a) **Class 2 and 3 buildings** - Every *required exit* must be fire-isolated unless it connects not more than-
 - (i) 3 consecutive *storeys* in a Class 2 building; or
 - (ii) 2 consecutive *storeys* in a Class 3 building,
 and one extra *storey* may be included if it is only for the accommodation of motor vehicles or for other ancillary purposes.
- (b) **Class 5 to 9 buildings** - Every *required exit* must be fire-isolated unless-
 - (i) in a Class 9a building - it does not connect or pass through more than 2 consecutive *storeys* in areas other than *patient care areas*; or
 - (ii) it is part of an *open spectator stand*, or
 - (iii) in any other case, it does not connect or pass through more than 2 consecutive *storeys* or 3 consecutive *storeys* if the building has a sprinkler system complying with Specification E1.5 installed throughout.

*Deemed-to-Satisfy Provisions***D1.4 Exit travel distances**

- (a) **Class 2 and 3 buildings** -
- (i) The entrance doorway of any *sole-occupancy unit* must be not more than-
 - (A) 6 m from an *exit* or from a point from which travel in different directions to 2 *exits* is available; or
 - (B) 20 m from a single *exit* serving the *storey* at the level of egress to a road or *open space*; and
 - (ii) no point on the floor of a room which is not in a *sole-occupancy unit* must be more than 20 m from an *exit* or from a point at which travel in different directions to 2 *exits* is available.
- (b) **Class 4 parts** - The entrance doorway to any Class 4 part must be not more than 6 m from an *exit* or a point from which travel in different directions to 2 *exits* is available.
- (c) **Class 5 to 9 buildings** - Subject to (d), (e) and (f)-
- (i) no point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m; and
 - (ii) in a Class 5 or 6 building, the distance to a single *exit* serving a *storey* at the level of access to a road or *open space* may be increased to 30 m.
- (d) **Class 9a buildings** - In a *patient care area* in a Class 9a building-
- (i) no point on the floor must be more than 12 m from a point from which travel in different directions to 2 of the *required exits* is available; and
 - (ii) the maximum distance to one of those *exits* must not be more than 30 m from the starting point.
- (e) **Open spectator stands** - The distance of travel to an *exit* in a Class 9b building used as an *open spectator stand* must be not more than 60 m.
- (f) **Assembly buildings** - In a Class 9b building other than a *school* or *early childhood centre*, the distance to one of the *exits* may be 60 m if-

Deemed-to-Satisfy Provisions

- (i) the path of travel from the room concerned to that *exit* is through another area which is a corridor, hallway, lobby, ramp or other circulation space; and
- (ii) the room is smoke-separated from the circulation space by construction having an FRL of not less than 60/60/60 with every doorway in that construction protected by a tight fitting *self-closing* solid-core door not less than 35 mm thick; and
- (iii) the maximum distance of travel does not exceed 40 m within the room and 20 m from the doorway to the room through the circulation space to the *exit*.

D1.5 Distance between alternative exits

Exits that are *required* as alternative means of egress must be-

- (a) distributed as uniformly as practicable within or around the *storey* served and in positions where unobstructed access to at least 2 *exits* is readily available from all points on the floor including lift lobby areas; and
- (b) not less than 9 m apart; and
- (c) not more than-
 - (i) in a Class 2 or 3 building - 45 m apart; or
 - (ii) in a Class 9a building, if such *required exits* serve a *patient care area* - 45 m apart; or
 - (iii) in all other cases - 60 m apart; and
- (d) located so that alternative paths of travel do not converge such that they become less than 6 m apart.

D1.6 Dimensions of exits

In a *required exit* or path of travel to an *exit*-

- (a) the unobstructed height throughout must be not less than 2 m; except the unobstructed height of any doorway may be reduced to not less than 1980 mm; and
- (b) if the *storey* or *mezzanine* accommodates not more than 100 persons, the unobstructed width except for doorways must be not less than-
 - (i) 1 m; or

	<i>Deemed-to-Satisfy Provisions</i>
NSW D1.6(f)(v)	<ul style="list-style-type: none"> <li style="margin-left: 40px;">(ii) 1.8 m in a passageway, corridor or ramp normally used for the transportation of patients in beds within a <i>treatment area</i> or <i>ward area</i>; and (c) if the <i>storey</i> or <i>mezzanine</i> accommodates more than 100 persons but not more than 200 persons, the aggregate width, except for doorways, must be not less than- <ul style="list-style-type: none"> (i) 1 m plus 250 mm for each 25 persons (or part) in excess of 100; or (ii) 1.8 m in a passageway, corridor or ramp normally used for the transportation of patients in beds within a <i>treatment area</i> or <i>ward area</i>; and (d) if the <i>storey</i> or <i>mezzanine</i> accommodates more than 200 persons, the aggregate width, except for doorways, must be increased to- <ul style="list-style-type: none"> (i) 2 m plus 500 mm for every 60 persons (or part) in excess of 200 persons if egress involves a change in floor level by a stairway or ramp with a gradient steeper than 1 in 12; or (ii) in any other case, 2 m plus 500 mm for every 75 persons (or part) in excess of 200; and (e) in an <i>open spectator stand</i> which accommodates more than 2000 persons, the aggregate width, except for doorways, must be increased to 17 m plus a width (in metres) equal to the number in excess of 2000 divided by 600; and (f) the width of a doorway must be not less than- <ul style="list-style-type: none"> (i) in <i>patient care areas</i> through which patients would normally be transported in beds, if the door opens into a corridor of width- <ul style="list-style-type: none"> (A) greater than 1.8 m and less than 2.2 m - 1200 mm; or (B) not less than 2.2 m - 1070 mm; or (ii) in <i>patient care areas</i> in a <i>horizontal exit</i> - 1250 mm; or (iii) the width of each <i>exit</i> provided to comply with (b), (c), (d) or (e), minus 250 mm; or (iv) in any other case except where it opens to a <i>sanitary compartment</i> or bathroom - 750 mm wide; and
NSW D1.6(h)	<ul style="list-style-type: none"> (g) the width of a <i>required exit</i> must not diminish in the direction of travel to a road or <i>open space</i>, except where the width is increased in accordance with (b)(ii) or (f)(i).

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*Deemed-to-Satisfy Provisions***D1.7 Travel via fire-isolated exits**

- (a) A doorway from a room must not open directly into a stairway, passageway or ramp that is *required* to be fire-isolated unless it is from-
- (i) a public lobby, corridor, hallway, or the like; or
 - (ii) a *sole-occupancy unit* occupying all of a *storey*; or
 - (iii) a *sanitary compartment*, airlock or the like.
- (b) Each *fire-isolated stairway* or *fire-isolated ramp* must provide independent egress from each *storey* served and discharge directly, or by way of its own *fire-isolated passageway*-
- (i) to a road or *open space*; or
 - (ii) to a point-
 - (A) in a *storey* or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is enclosed for no more than 1/3 of its perimeter; and
 - (B) from which an unimpeded path of travel, not further than 20 m, is available to a road or *open space*; or
 - (iii) into a covered area that-
 - (A) adjoins a road or *open space*; and
 - (B) is open for at least 1/3 of its perimeter; and
 - (C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and
 - (D) provides an unimpeded path of travel from the point of discharge to the road or *open space* of not more than 6 m.
- (c) Where travel from the point of discharge necessitates passing within 6 m of any part of an *external wall* of the same building, measured at right angles to the path of travel, that part of the wall must have-
- (i) an FRL of at least 60/60/60; and
 - (ii) any openings protected internally in accordance with C3.4.
- (d) If more than 2 access doorways, not from a *sanitary compartment* or the like, open to a *required fire-isolated exit* in the same *storey*-

Deemed-to-Satisfy Provisions

- (i) a smoke lobby in accordance with D2.6 must be provided; or
 - (ii) the *exit* must be pressurised in accordance with AS 1668.1.
- (e) A ramp must be provided at any change in level less than 600 mm in a *fire-isolated passageway* in a Class 9 building.

D1.8 External stairways

An external stairway may serve as a *required exit* instead of a *fire-isolated stairway* in a building with an *effective height* of not more than 25 m if the stairway (including any connecting access bridges) is of *non-combustible* construction throughout, and-

- (a) if any part of the stairway is exposed to, and less than 6 m from a *window*, doorway, except a doorway complying with C3.4 serving the external stairway, or the like in an *external wall* of the building served by the stairway-
 - (i) the stairway must be enclosed for its full height above the lowest level of the window or doorway by *non-combustible* construction with an FRL of not less than 60/60/60; and
 - (ii) no window or the like in the enclosing walls of the stairway must be within 6 m if it is unprotected, or 3 m if it is protected in accordance with C3.4, of any *window*, doorway or the like in the *external walls* of the building; or
- (b) if any part of the stairway is exposed to, and less than 6 m but more than 3 m from a *window*, doorway or the like in an *external wall* of the building, the *window*, doorway or the like must be protected in accordance with C3.4.

D1.9 Travel by non-fire-isolated stairways or ramps

- (a) A non *fire-isolated stairway* or non *fire-isolated ramp* serving as a *required exit* must provide a continuous means of travel by its own flights of stairs and landings from every *storey* served to the level at which egress to a road or *open space* is provided.

Deemed-to-Satisfy Provisions

- (b) In a Class 2, 3 or 4 building, the distance between the doorway of a room or *sole-occupancy unit* and the point of egress to a road or *open space* by way of a stairway or ramp that is not fire-isolated and is *required* to serve that room or *sole-occupancy unit* must not exceed-
- (i) 30 m in a building of Type C construction; or
 - (ii) 60 m in all other cases.
- (c) In a Class 5 to 9 building, the distance from any point on a floor to a point of egress to a road or *open space* by way of a *required non fire-isolated stairway* or *non fire-isolated ramp* must not exceed 80 m.
- (d) In a Class 2, 3 or 9a building, a *required non fire-isolated stairway* or *non fire-isolated ramp* must discharge at a point not more than-
- (i) 15 m from a doorway providing egress to a road or *open space* or from a *fire-isolated passageway* leading to a road or *open space*; or
 - (ii) 30 m from one of 2 such doorways or passageways if travel to each of them from the *non fire-isolated stairway* or *non fire-isolated ramp* is in opposite or approximately opposite directions.
- (e) In a Class 5 to 8 or 9b building, a *required non fire-isolated stairway* or *non fire-isolated ramp* must discharge at a point not more than-
- (i) 20 m from a doorway providing egress to a road or *open space* or from a *fire-isolated passageway* leading to a road or *open space*; or
 - (ii) 40 m from one of 2 such doorways or passageways if travel to each of them from the *non fire-isolated stairway* or *non fire-isolated ramp* is in opposite or approximately opposite directions.
- (f) In a Class 2 or 3 building, if 2 or more *exits* are *required* and are provided by means of internal *non fire-isolated stairways* or *non fire-isolated ramps*, each *exit* must-
- (i) provide separate egress to a road or *open space*; and
 - (ii) be suitably smoke-separated from each other at the level of discharge.

*Deemed-to-Satisfy Provisions***D1.10 Discharge from exits**

- (a) An *exit* must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the *exit*, or access to it.
- (b) If a *required exit* leads to an *open space*, the path of travel to the road must have an unobstructed width throughout of not less than-
- (i) the minimum width of the *required exit*, or
 - (ii) 1 m,
- whichever is the greater.
- (c) If an *exit* discharges to *open space* that is at a different level than the public road to which it is connected, the path of travel to the road must be by-
- (i) a ramp or other incline having a gradient not steeper than 1:8 at any part, or not steeper than 1:14 if *required* by the deemed-to-satisfy provisions of Part D3; or
 - (ii) except if the *exit* is from a Class 9a building, a stairway complying with the deemed-to-satisfy provisions of the BCA.
- (d) The discharge point of alternative *exits* must be located as far apart as practical.
- (e) In a Class 9b building which is an *open spectator stand* that accommodates more than 500 persons, a *required* stairway or *required* ramp must not discharge to the ground in front of the stand.
- (f) In a Class 9b building containing an auditorium which accommodates more than 500 persons, not more than 2/3 of the *required* width of *exits* must be located in the main entrance foyer.

NSW D1.10(f)

D1.11 Horizontal exits

- (a) *Horizontal exits* must not be counted as *required exits*-
- (i) between *sole-occupancy units*, or
 - (ii) in a Class 9b building used as an *early childhood centre*, primary or secondary school.

Deemed-to-Satisfy Provisions

- (b) In a Class 9a building, *horizontal exits* may be counted as *required exits* if the path of travel from a *fire compartment* leads by one or more *horizontal exits* directly into another *fire compartment* which has at least one *required exit* which is not a *horizontal exit*.
- (c) In cases other than in (b), *horizontal exits* must not comprise more than half of the *required exits* from any part of a *storey* divided by a *fire wall*.
- (d) *Horizontal exits* must have a clear area on each side of the *fire wall* to accommodate the total number of persons (calculated under D1.13) from both parts of the *storey*, of not less than-
 - (i) 2.5 m² per patient in a Class 9a building; and
 - (ii) 0.5 m² per person in any other case.

D1.12 Non-required stairways, ramps or escalators

An escalator, moving walkway or non-required non fire-isolated stairway or pedestrian ramp-

- (a) must not be used in a *patient care area* in a Class 9a building; and
- (b) may connect any number of *storeys* if it is-
 - (i) in an *open spectator stand* or indoor sports stadium; or
 - (ii) in a *carpark* or an *atrium*; or
 - (iii) outside a building; or
 - (iv) in a Class 5 or 6 building that is sprinklered throughout, where the escalator, walkway, stairway or ramp complies with Specification D1.12; and
- (c) except where permitted in (b) must not connect more than-
 - (i) 3 *storeys* if each of those *storeys* is provided with a sprinkler system complying with Specification E1.5 throughout; or
 - (ii) 2 *storeys*,
provided that in each case, those *storeys* must be consecutive, and one of those *storeys* is situated at a level at which there is direct egress to a road or *open space*; and
- (d) except where permitted in (b) or (c), must not connect, directly or indirectly, more than 2 *storeys* at any level in a Class 5, 6, 7, 8 or 9 building and those *storeys* must be consecutive.

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D1.13 Number of persons accommodated

The number of persons accommodated in a *storey*, room or *mezzanine* must be determined with consideration to the purpose for which it is used and the layout of the *floor area* by-

- (a) calculating the sum of the numbers obtained by dividing the *floor area* of each part of the *storey* by the number of square metres per person listed in Table D1.13 according to the use of that part, excluding spaces set aside for-
 - (i) lifts, stairways, ramps and escalators, corridors, hallways, lobbies and the like; and
 - (ii) service ducts and the like, *sanitary compartments* or other ancillary uses; or
- (b) reference to the seating capacity in an *assembly building* or room; or
- (c) any other suitable means of assessing its capacity.

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Table D1.13

AREA PER PERSON ACCORDING TO USE

Type of use	m ² per person
Art gallery, exhibition area, museum	4
Bar, cafe, church, dining room	1
Board room	2
Boarding House	15
Computer room	25
Court room -judicial area	10
-public seating	1
Dance floor	0.5
Dormitory	5
<i>Early childhood centre</i>	4
Factory - (a) machine shop, fitting shop or like place for cutting, for cutting, grading, finishing or fitting of metals or glass, except in the fabrication of structural steelwork or manufacture of vehicles or bulky products	5
(b) areas used for fabrication and processing other than those in (a)	50
(c) a space in which the layout and natural use of fixed plant or equipment determine the number of persons who will occupy the space during working hours	Area per person determined by the use of the plant or equipment
Garage - public	30

Tas Table D1.13

Continued

Deemed-to-Satisfy Provisions

Table D1.13 continued	
Type of use	m ² per person
Gymnasium	3
Hostel, hotel, motel, guest house	15
Indoor sports stadium - arena	10
Kiosk	1
Kitchen, laboratory, laundry	10
Library - reading space	2
- storage space	30
Office, including one for typewriting or document copying	10
<i>Patient care areas</i>	10
Plant Room -ventilation, electrical or other service units	30
-boilers or power plant	50
Reading Room	2
Restaurant	1
<i>School</i> - general classroom	2
- multi-purpose hall	1
- staff room	10
- trade and practical area -primary	4
-secondary	As for workshop
Shop - space for sale of goods-	
(a) at a level entered direct from the open air or any lower level	3
(b) all other levels	5
Showroom - display area, covered mall or arcade	5
Skating rink, based on rink area	1.5
Spectator stand, audience viewing area:	
- standing viewing area	0.3
- removable seating	1
- fixed seating (number of seats)	
- bench seating (450 mm/person)	
Storage space	30
<i>Swimming pool</i> , based on pool area	1.5
Switch room, transformer room	30
Telephone exchange - private	30
Theatre and public halls	1
Theatre dressing room	4
Transport terminal	2
Workshop - for maintenance staff	30
- for manufacturing processes	As for Factory

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NSW Table D1.13

*Deemed-to-Satisfy Provisions***D1.14 Measurement of distances**

The nearest part of an *exit* means in the case of-

- (a) a *fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp*, the nearest part of the doorway providing access to them; and
- (b) a *non-fire-isolated stairway*, the nearest part of the nearest riser; and
- (c) a *non-fire-isolated ramp*, the nearest part of the junction of the floor of the ramp and the floor of the *storey*; and
- (d) a doorway opening to a road or *open space*, the nearest part of the doorway; and
- (e) a *horizontal exit*, the nearest part of the doorway.

D1.15 Method of measurement

The following rules apply:

- (a) In the case of a room that is not a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part, the distance includes the straight-line measurement from any point on the floor of the room to the nearest part of a doorway leading from it, together with the distance from that part of the doorway to the single *required exit* or point from which travel in different directions to 2 *required exits* is available.
- (b) Subject to (d), the distance from the doorway of a *sole-occupancy unit* in a Class 2 or 3 building or a Class 4 part is measured in a straight line to the nearest part of the *required single exit* or point from which travel in different directions to 2 *required exits* is available.
- (c) Subject to (d), the distance between *exits* is measured in a straight line between the nearest parts of those *exits*.
- (d) Only the shortest distance is taken along a corridor, hallway, external balcony or other path of travel that curves or changes direction.
- (e) If more than one corridor, hallway, or other internal path of travel connects *required exits*, the measurement is along the path of travel through the point at which travel in different directions to those *exits* is available.

Deemed-to-Satisfy Provisions

- (f) If a wall (including a demountable *internal wall*) that does not bound-
- (i) a room; or
 - (ii) a corridor, hallway or the like,
- causes a change of direction in proceeding to a *required exit*, the distance is measured along the path of travel past that wall.
- (g) If permanent fixed seating is provided, the distance is measured along the path of travel between the rows of seats.
- (h) In the case of a non *fire-isolated stairway* or non *fire-isolated ramp*, the distance is measured along a line connecting the nosings of the treads, or along the slope of the ramp, together with the distance connecting those lines across any intermediate landings.

D1.16 Plant rooms and lift motor rooms: Concession

- (a) Where a plant room or lift motor room has a *floor area*-
- (i) not more than 100 m², a ladder may be used in lieu of a stairway from each point of egress from the room; or
 - (ii) more than 100 m² and not more than 200 m², and where two or more points of egress are provided from the room, a ladder may be used in lieu of a stairway from all but one of those points.
- (b) A ladder permitted under (a)-
- (i) may form part of an *exit* provided that in the case of a *fire-isolated stairway* it is contained within the *shaft*; or
 - (ii) may discharge within a *storey* in which case it must be considered as forming part of the path of travel; and
 - (iii) must comply with-
 - (A) AS 1657 for a plant room; and
 - (B) AS 1735.2 for a lift motor room.

ACT D1.101

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PART D2 CONSTRUCTION OF EXITS

Deemed-to-Satisfy Provisions

D2.0 Deemed-to-Satisfy Provisions

Performance Requirements DP1 to DP9 are satisfied by complying with-

- (a) D1.1 to D1.16, D2.1 to D2.23 and D3.1 to D3.7; and
- (b) in a building containing an *atrium*, Part G3; and
- (c) for theatres, *stages* and public halls, Part H1.

NSW D2.1

D2.1 Application of Part

Except for D2.13 and D2.16, the deemed-to-satisfy provisions of this Part do not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part.

D2.2 Fire-isolated stairways and ramps

A stairway or ramp (including any landings) that is *required* to be within a *fire-resisting shaft* must be constructed-

- (a) of *non-combustible* materials; and
- (b) so that if there is local failure, it will not cause structural damage to, or impair the fire-resistance of, the *shaft*.

D2.3 Non-fire-isolated stairways and ramps

In a building having a *rise in storeys* of more than 2, *required* stairs and ramps (including landings and any supporting *structural members*) which are not *required* to be within a *fire-resisting shaft*, must be constructed according to D2.2, or only of-

- (a) reinforced or prestressed concrete; or
- (b) steel in no part less than 6 mm thick; or
- (c) timber that-
 - (i) has a finished thickness of not less than 44 mm; and
 - (ii) has an average density of not less than 800 kg/m³ at a moisture content of 12%; and
 - (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue.

*Deemed-to-Satisfy Provisions***D2.4 Separation of rising and descending stair flights**

If a stairway serving as an *exit* is *required* to be fire-isolated-

- (a) there must be no direct connection between-
 - (i) a flight of stairs rising from a *storey* below the lowest level of access to a road or *open space*; and
 - (ii) a flight of stairs descending from a *storey* above that level; and
- (b) any construction that separates or is common to the rising and descending flights of stairs must be *non-combustible* and have an FRL of not less than 60/60/60.

D2.5 Open access ramps and balconies

Where an open access ramp or balcony forms part of a *required exit*, it must-

- (a) have ventilation openings to the outside air which-
 - (i) have a total unobstructed area not less than the *floor area* of the ramp or balcony; and
 - (ii) are evenly distributed along the open sides of the ramp or balcony; and
- (b) not be enclosed on its open sides above a height of 1 m except by an open grille or the like having a free air space of not less than 75% of its area.

D2.6 Smoke lobbies

A smoke lobby *required* by D1.7 must-

- (a) have a *floor area* not less than 6 m²; and
- (b) be separated from the occupied areas in the *storey* by walls which are impervious to smoke, and-
 - (i) have an FRL of not less than 60/60/- (which may be fire-protective grade plasterboard, gypsum block with set plaster, face brickwork, glass blocks or glazing); and
 - (ii) extend from slab to slab, or to the underside of a ceiling with a *resistance to the incipient spread of fire* of 60 minutes which covers the lobby; and

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- (iii) any construction joints between the top of the walls and the floor slab, roof or ceiling must be smoke sealed with intumescent putty or other suitable material; and
- (c) at any opening from the occupied areas, have smoke doors complying with Clause 3 of Specification C3.4 except that the smoke sensing device need only be located on the approach side of the opening; and
- (d) be pressurised as part of the *exit* if the *exit* is *required* to be pressurised under E2.2.

D2.7 Installations in exits and paths of travel

- (a) Access to service *shafts* and services other than to fire-fighting or detection equipment as permitted in the deemed-to-satisfy provisions of Section E, must not be provided from a *fire-isolated stairway*, *fire-isolated passageway* or *fire-isolated ramp*.
- (b) An opening to any chute or duct conveying hot products of combustion must not be located in any part of a *required exit* or any corridor, hallway, lobby or the like leading to a *required exit*.
- (c) Gas or other fuel services must not be installed in a *required exit*.
- (d) Services or equipment must not be installed in a *required exit* or in any corridor, hallway, lobby or the like leading to a *required exit* if it comprises-
 - (i) electricity meters, distribution boards or ducts; or
 - (ii) central telecommunications distribution boards or equipment; or
 - (iii) electrical motors or other motors serving equipment in the building,
 unless it is enclosed by *non-combustible* construction or a *fire-protective covering* with doorways or openings suitably sealed against smoke spreading from the enclosure.

*Deemed-to-Satisfy Provisions***D2.8 Enclosure of space under stairs and ramps**

- (a) **Fire-isolated stairways and ramps** - If the space below a *required fire-isolated stairway* or *fire-isolated ramp* is within the fire-isolated *shaft*, it must not be enclosed to form a cupboard or similar enclosed space.
- (b) **Non fire-isolated stairways and ramps** - The space below a *required non fire-isolated stairway* (including an external stairway) or non *fire-isolated ramp* must not be enclosed to form a cupboard or other enclosed space unless-
 - (i) the enclosing walls and ceilings have an FRL of not less than 60/60/60; and
 - (ii) any access doorway to the enclosed space is fitted with a *self-closing* - /60/30 fire door.

D2.9 Width of stairways

- (a) The *required* width of a stairway must-
 - (i) be measured clear of all obstructions such as handrails, projecting parts of balustrades, and the like; and
 - (ii) extend without interruption, except for ceiling cornices, to a height not less than 2 m vertically above a line along the nosings of the treads or the floor of the landing.
- (b) A *required* stairway that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a balustrade or handrail continuous between landings and each division is less than 2 m wide.

D2.10 Pedestrian ramps

- (a) A *fire-isolated ramp* may be substituted for a *fire-isolated stairway* if the construction enclosing the *ramp* and the width and ceiling height comply with the requirements for a *fire-isolated stairway*.
- (b) A ramp serving as a *required exit* must have a gradient not steeper than-
 - (i) 1:12 in *patient care areas* in a Class 9a building; and
 - (ii) that *required* by the deemed-to-satisfy provisions of Part D3 if applicable; and

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- (iii) 1:8 in any other case.
- (c) The floor surface of a ramp must have a non-slip finish.

D2.11 Fire-isolated passageways

- (a) The enclosing construction of a *fire-isolated passageway* must be *non-combustible* and have an FRL when tested for a fire outside the passageway in another part of the building of-
 - (i) if the passageway discharges from a *fire-isolated stairway* or *ramp* - not less than that *required* for the stairway or ramp *shaft*, or
 - (ii) in any other case - not less than 60/60/60.
- (b) Notwithstanding (a)(ii), the top construction of a *fire-isolated passageway* need not have an FRL if the walls of the *fire-isolated passageway* extend to the underside of-
 - (i) a *non-combustible* roof covering; or
 - (ii) a ceiling having a *resistance to the incipient spread of fire* of not less than 60 minutes separating the roof space or ceiling space in all areas surrounding the passageway within the *fire compartment*.

D2.12 Roof as open space

If an *exit* discharges to a roof of a building, the roof must-

- (a) have an FRL of not less than 120/120/120; and
- (b) not have any rooflights or other openings within 3 m of the path of travel of persons using the *exit* to reach a road or *open space*.

D2.13 Treads and risers

A stairway must have-

- (a) not more than 18 or less than 2 risers in each flight; and
- (b) going (G), riser (R) and quantity (2R + G) in accordance with Table D2.13; and
- (c) goings and risers that are constant throughout in one flight; and
- (d) risers which do not have any openings that would allow a 125 mm sphere to pass through between the treads; and

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- (e) treads which have a non-slip finish or an adequate non-skid strip near the edge of the nosings; and
- (f) treads of solid construction (not mesh or other perforated material) if the stairway is more than 10 m high or connects more than 3 storeys; and
- (g) in a Class 9b building - not more than 36 risers in consecutive flights without a change in direction of at least 30°; and
- (h) in the case of a *required* stairway, no stepped quarter landings; and
- (i) in the case of a *non-required* stairway, not more than 4 winders in a quarter landing.

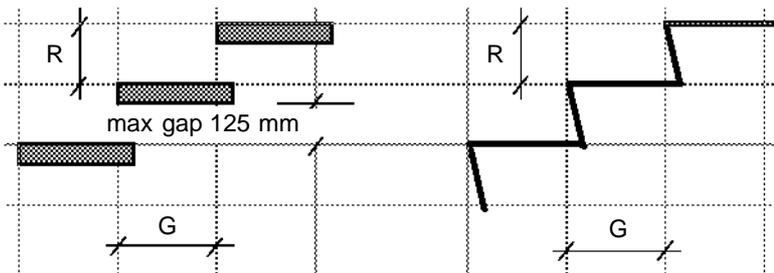
ACT D2.13(e)

NSW D2.13(g),
(j),(k),(l)

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**Table D2.13
RISER AND GOING DIMENSIONS (mm)**

	Riser (R)		Going (G) ^(b)		Quantity (2R+G)	
	Max	Min	Max	Min	Max	Min
Public stairs	190	115	355	250	700	550
Private stairs ^(a)	190	115	355	240	700	550



Note:

- (a) Private stairs are-
 - (i) stairs in a *sole-occupancy unit* in a Class 2 building or Class 4 part; and
 - (ii) in any building, stairs which are not part of a *required exit* and to which the public do not normally have access.
- (b) The going in tapered treads (except winders in a quarter landing) in a curved or spiral stair is measured-
 - (i) 270 mm in from the outer side of the unobstructed width of the stairway if the stairway is less than 1 m wide (applicable to a *non-required* stairway only); and
 - (ii) 270 mm from each side of the unobstructed width of the stairway if the stairway is 1 m wide or more.

*Deemed-to-Satisfy Provisions***D2.14 Landings**

In a stairway-

- (a) landings having a maximum gradient of 1:50 may be used in any building to limit the number of risers in each flight and each landing must-
 - (i) be not less than 750 mm long measured 500 mm from the inside edge of the landing; and
 - (ii) have a non-slip finish throughout or a adequate non-skid strip near the edge of the landing where it leads to a flight of stairs below; and
- (b) in a Class 9a building-
 - (i) the area of any landing must be sufficient to move a stretcher, 2 m long and 600 mm wide, at a gradient not more than the gradient of the stairs, with at least one end of the stretcher on the landing while changing direction between flights; or
 - (ii) the stair must have a change of direction of 180°, and the landing a clear width of not less than 1.6 m and a clear length of not less than 2.7 m.

D2.15 Thresholds

The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless-

- (a) in *patient care areas* in a Class 9a building, the door sill is not more than 25 mm above the finished floor level to which the doorway opens; or
- (b) in other cases-
 - (i) the doorway opens to a road or *open space*, external stair landing or external balcony; and
 - (ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.

NSW D2.15(b),(c)

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*Deemed-to-Satisfy Provisions***D2.16 Balustrades**

- (a) A continuous balustrade must be provided along the side of any roof to which public access is provided, any stairway or ramp, any floor, corridor, hallway, balcony, verandah, *mezzanine*, access bridge or the like and along the side of any path of access to a building, if-
- (i) it is not bounded by a wall; and
 - (ii) its level is more than 1 m above the floor or ground surface beneath,
- except at the perimeter of a *stage*, rigging loft, loading dock or area accessible only to maintenance staff or the like.
- (b) A balustrade in-
- (i) *fire-isolated stairways*, *fire-isolated ramps* and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and
 - (ii) Class 7 (other than *carparks*) and Class 8 buildings and parts of buildings containing those classes,
- must comply with (f) and (g)(i).
- (c) A balustrade in stairways and ramps, other than those covered in (b), must comply with (f) and (g)(ii).
- (d) A balustrade along the side of a horizontal or near horizontal surface such as a-
- (i) roof to which public access is provided and any path of access to a building; and
 - (ii) floor, corridor, hallway, balcony, verandah, *mezzanine*, access bridge or the like,
- must comply with (f) and (g)(ii).
- (e) A balustrade or other barrier in front of fixed seating on a *mezzanine* or balcony within an auditorium in a Class 9b building must comply with (f)(iv) and (g)(ii).
- (f) The height of a balustrade must be constructed in accordance with the following:
- (i) The height is not less than 865 mm above the nosings of the stair treads or the floor of a ramp.
 - (ii) The height is not less than-
 - (A) 1 m above the floor of any access path, balcony, landing or the like; or

Qld D2.16(f)(ii)

	<i>Deemed-to-Satisfy Provisions</i>
NSW D2.16(f)(iv)	<ul style="list-style-type: none"> <li style="margin-left: 40px;">(B) 865 mm above the floor of a landing to a stair or ramp where the balustrade is provided along the inside edge of the landing and does not exceed a length of 500 mm. <li style="margin-left: 20px;">(iii) A transition zone may be incorporated where the balustrade height changes from 865 mm on the stair flight or ramp to 1 m at the landing. <li style="margin-left: 20px;">(iv) For a balustrade provided under (e), the height above the floor must be not less than- <ul style="list-style-type: none"> (A) 1 m; or (B) 700 mm and a horizontal projection extends not less than 1 m outwards from the top of the balustrade.
Qld D2.16(g)(ii)	<ul style="list-style-type: none"> <li style="margin-left: 20px;">(g) Openings in a balustrade must be constructed in accordance with the following: <ul style="list-style-type: none"> <li style="margin-left: 20px;">(i) For balustrades provided under (b)- <ul style="list-style-type: none"> (A) the space between balusters or the width of any opening in the balustrade (including any openable <i>window</i> or panel) must not be more than 300 mm; or (B) where rails are used, a rail must be provided at a height of not more than 150 mm above the nosings of the stair treads or the floor of the landing, balcony or the like and the space between rails must not be more than 460 mm. <li style="margin-left: 20px;">(ii) For balustrades other than those provided under (b), any opening does not permit a 125 mm sphere to pass through it and for stairs, the space is measured above the nosings.
	<p>D2.17 Handrails</p> <ul style="list-style-type: none"> <li style="margin-left: 20px;">(a) Except for handrails referred to in D2.18, handrails must be- <ul style="list-style-type: none"> <li style="margin-left: 20px;">(i) located along at least one side of the ramp or flight of stairs; and <li style="margin-left: 20px;">(ii) located along each side if the total width of the stairway or ramp is 2 m or more; and <li style="margin-left: 20px;">(iii) not more than 2 m apart in the case of intermediate handrails; and

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- (iv) in a Class 9b building used as a primary *school*, fixed at a height of not less than 865 mm with a second rail fixed at a height of not less than 700 mm; and
 - (v) in any other case, fixed at a height of not less than 865 mm above the nosings of stair treads and the floor surface of the ramp, landing, or the like; and
 - (vi) continuous between stair flight landings and have no obstruction on or above them that will tend to break a hand-hold.
- (b) Handrails in a Class 9a building must be provided along at least one side of every passageway or corridor used by patients, and must be-
- (i) fixed not less than 50 mm clear of the wall; and
 - (ii) where practicable, continuous for their full length.
- (c) Provisions for handrails to assist people with disabilities must be provided in accordance with D3.3(a)(ii).

D2.18 Fixed platforms, walkways, stairways and ladders

In machinery rooms, boiler houses, lift-motor rooms, plant-rooms and the like, fixed platforms, walkways, stairways and ladders and any tread and riser, landing, balustrade or handrail attached thereto, must comply with AS 1657.

D2.19 Doorways and doors

A doorway in any building serving as a *required exit* or forming part of a *required exit*, or any doorway in a *patient care area* of a Class 9a building-

- (a) must not be fitted with a revolving door; and
- (b) must not be fitted with a roller shutter or tilt-up door unless-
 - (i) it serves a Class 6, 7 or 8 building or part with a *floor area* not more than 200 m²; and
 - (ii) the doorway is the only *required exit* from the building or part; and
 - (iii) it is held in the open position while the building or part is lawfully occupied; and
- (c) must not be fitted with a sliding door unless-
 - (i) it leads directly to a road or *open space*; and

Deemed-to-Satisfy Provisions

NSW D2.19(e)

- (ii) the door is able to be opened manually under a force of not more than 110 N; and
- (d) if fitted with a door which is power-operated-
 - (i) it must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and
 - (ii) if it leads directly to a road or *open space* it must open *automatically* if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the *fire compartment* served by the door.

D2.20 Swinging doors

A swinging door in a *required exit* or forming part of a *required exit*-

- (a) must not encroach-
 - (i) at any part of its swing by more than 500 mm on the *required width* of a *required* stairway, passageway or ramp, including the landings; and
 - (ii) when fully open, by more than 100 mm on the *required width* of the *required exit*, and

the measurement of encroachment in each case is to include door handles or other furniture or attachments to the door; and
- (b) must swing in the direction of egress unless-
 - (i) it serves a building or part with a *floor area* not more than 200 m², it is the only *required exit* from the building or part and it is fitted with a device for holding it in the open position; or
 - (ii) it serves a *sanitary compartment* or airlock (in which case it may swing in either direction); and
- (c) must not otherwise impede the path or direction of egress.

D2.21 Operation of latch

A door in a *required exit*, forming part of a *required exit* or in the path of travel to a *required exit* must be readily openable without a key from the side that faces a person seeking egress, by a single hand downward action or pushing action on a single device which is located between 900 mm and 1.2 m from the floor, except if it-

Deemed-to-Satisfy Provisions

- (a) serves a vault, strong-room, *sanitary compartment*, or the like; or
- (b) serves only, or is within-
 - (i) a *sole-occupancy unit* in a Class 2 or 3 building or a Class 4 part; or
 - (ii) a *sole-occupancy unit* with a *floor area* not more than 200 m² in a Class 5, 6, 7 or 8 building; or
 - (iii) a space which is otherwise inaccessible to persons at all times when the door is locked; or
- (c) serves an occupancy where special arrangements for security are necessary and it can be immediately unlocked-
 - (i) by operating a fail-safe control switch, not contained within a protective enclosure, to actuate a device to unlock the door; or
 - (ii) by hand by a person or persons, specifically nominated by the owner, properly instructed as to the duties and responsibilities involved and available at all times when the building is lawfully occupied so that persons in the building or part may immediately escape if there is a *fire* or other emergency; or
- (d) is fitted with a fail-safe device which *automatically* unlocks the door upon the activation of any sprinkler system complying with Specification E1.5 or smoke or heat detector system installed throughout the building; or
- (e) serves a *storey* or room accommodating more than 100 persons, determined in accordance with D1.13, in a Class 9b building, other than a *school*, an *early childhood centre* or a building used for religious purposes, in which case it must be readily openable-
 - (i) without a key from the side that faces a person seeking egress; and
 - (ii) by a single hand pushing action on a single device such as a panic bar located between 900 mm and 1.2 m from the floor; and
 - (iii) where double doors are installed the provisions of (i) and (ii) need only apply to one door.

NSW D2.21(f)
Vic D2.21(f)

Amdt 0

*Deemed-to-Satisfy Provisions***D2.22 Re-entry from fire-isolated exits**

Doors must not be locked from inside a *fire-isolated stairway, fire-isolated ramp or fire-isolated passageway* enclosure to prevent re-entry to the *storey* or room it serves in-

- (a) a Class 9a building; or
- (b) a building more than 25 m in *effective height* unless all the doors are *automatically* unlocked by a fail-safe device upon the activation of a fire alarm, and-
 - (i) at least at every fourth *storey* the doors are not able to be locked and a sign is fixed on it stating that re-entry is available; or
 - (ii) an intercommunication system, or an audible or visual alarm system, operated from within the enclosure is provided near the doors and a sign is fixed adjacent to it explaining its purpose and method of operation.

D2.23 Signs on doors

- (a) A sign, to alert persons that the operation of certain doors must not be impaired, must be installed where it can readily be seen on, or adjacent to, a-
 - (i) (A) *required* fire door providing direct access to a fire isolated *exit*, except a door providing direct egress from a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part; and
 - (B) *required* smoke door,
 - on the side of the door that faces a person seeking egress; and
 - (ii) (A) fire door forming part of a *horizontal exit*, and
 - (B) smoke door that swings in both directions; and
 - (C) door leading from a fire isolated *exit* to a road or *open space*,
 - on each side of the door.

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- (b) A sign referred to in (a) must be in capital letters not less than 20 mm high in a colour contrasting with the background and state-
 - (i) for an *automatic* door held open by an *automatic* hold-open device-
 "FIRE (SMOKE) DOOR - DO NOT OBSTRUCT"; or
 - (ii) for a *self-closing* door-
 "FIRE (SMOKE) DOOR
 DO NOT OBSTRUCT
 DO NOT KEEP OPEN"; or
 - (iii) for a door discharging from a fire-isolated *exit*-
 "FIRE SAFETY DOOR - DO NOT OBSTRUCT".

ACT D2.103
 NSW D2.101

Amdt 0

PART D3 ACCESS FOR PEOPLE WITH DISABILITIES

Deemed-to-Satisfy Provisions

D3.0 Deemed-to-Satisfy Provisions

Performance Requirements DP1 to DP9 are satisfied by complying with-

- (a) D1.1 to D1.16, D2.1 to D2.23 and D3.1 to D3.7; and
- (b) in a building containing an atrium, Part G3; and
- (c) for theatres, stages and public halls, Part H1.

SA D3.1

D3.1 Application of Part

The deemed-to-satisfy provisions of this Part apply to Class 3, 5, 6, 7, 8, 9 and 10a buildings.

D3.2 Access to buildings

Access for people with disabilities must be provided to and within buildings as set out in Table D3.2 by means of a continuous path of travel in accordance with AS 1428.1-

- (a) from the allotment boundary at a point of entry from a road to the doorway at the entrance floor; and
- (b) from any carparking space on the allotment (whether within or outside the building) provided in accordance with D3.5; and
- (c) from any other building on the allotment to which access for people with disabilities is *required*; and
- (d) through the principal public entrance.

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Deemed-to-Satisfy Provisions

**Table D3.2
REQUIREMENTS FOR ACCESS FOR PEOPLE WITH DISABILITIES**

SA Table D3.2
Class 2

Class of building	Access requirements
Class 3	
(a) Common areas	To and within- <ul style="list-style-type: none"> (i) the public areas on the entrance floor; and (ii) public areas in the building so that at least one of each different facility provided in public areas, is <i>accessible</i>; and (iii) every floor containing accommodation <i>required</i> to be <i>accessible</i>.
(b) If the building or group of buildings contains <i>sole-occupancy units</i> - for 1 to 20 units for each additional 20 units or part thereof	To and within one <i>sole-occupancy unit</i> . To and within one additional <i>sole-occupancy unit</i> .
(c) If accommodation is provided for more than 10 persons other than in <i>sole-occupancy units</i> - up to 49 beds more than 49 but not more than 99 more than 99	2 beds 4 beds 6 beds
Note: For the purpose of this Table:	
1. "public areas"-	
(a) includes reception areas, TV rooms, common lounges, common kitchen and dining areas, common recreation areas and the like; and	
(b) does not include internal public spaces such as corridors and lobbies providing access to <i>sole-occupancy units</i> not <i>required</i> to be <i>accessible</i> .	
2. A double bed counts as 1 bed.	
Class 5, 6, 7 and 8	To and within- <ul style="list-style-type: none"> (i) the entrance floor; and (ii) any other floor to which vertical access by way of a ramp, step ramp or kerb ramp complying with AS 1428.1 or a passenger lift is provided.
Class 9a	To and within all areas normally used by the public, patients or staff.

Continued

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Deemed-to-Satisfy Provisions

Table D3.2 continued

Class 9b-

An assembly building not being a school or an early childhood centre

To and within-

- (i) every auditorium but not to every tier or platform; and
- (ii) the main entrance to the auditorium; and
- (iii) if fixed seating is provided, not less than 1 wheelchair space for each 100 persons or part thereof, with a minimum of 2 spaces, up to 200 persons, and an additional space for each additional 200 persons or part thereof by which the number of persons exceeds 200.

A school

To and within-

- (i) all areas normally used by the occupants, including staff, students and visitors, if no alternative similar facilities to those provided in that area are *accessible* elsewhere in the *school*; and
- (ii) any other floor to which vertical access by way of a ramp, step ramp or kerb ramp complying with AS 1428.1, or a passenger lift is provided.

An early childhood centre

To and within all areas normally used by the occupants including staff, children and visitors.

Class 10a

To and within any area containing facilities such as a shower or water closet for people with disabilities.

Note: The calculation of the number of persons accommodated is in accordance with D1.13.

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D3.3 Parts of buildings to be accessible

- (a) In a building or part of a building *required* by Table D3.2 to be *accessible*-
 - (i) access must be provided-
 - (A) to any *sanitary compartment required* for the use of people with disabilities; and

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- (B) to areas normally used by the occupants, excluding any plantroom, commercial kitchen, cleaners' store room, maintenance accessway, rigging loft, or the like; and
 - (ii) where access is *required* to the entrance floor but not to other levels and a passenger lift is not installed, at least one *required* stair or ramp must have handrails complying with Clause 9 or 7 of AS 1428.1 respectively; and
 - (iii) every passenger lift must comply with E3.6.
- (b) A path of travel *required* to be *accessible* must not include a stairway, turnstile, revolving door, escalator or other impediment which would prevent a person in a wheelchair using it.
- (c) Access, finishes and fittings, including passageways, ramps, step ramps or kerb ramps, signs, doorways and other parts of the building *required* by this Part must comply with the provisions of AS 1428.1.

D3.4 Concessions

It is not necessary to provide access for people with disabilities to-

- (a) more than 30% of the public space in a restaurant, cafe, bar, function room, or the like, in a Class 6 or Class 9b building; or
- (b) a *mezzanine*; or
- (c) a space not regarded as a *storey* by definition; or
- (d) any area if access would be inappropriate because of the particular purpose for which the area is used.

SA D3.4(e)

D3.5 Carparking

Unless a parking service is provided and direct access to any carparking spaces by the general public or occupants is not available, carparking spaces for people with disabilities must-

- (a) be provided at the rate of not less than one carparking space for each 100 spaces or part thereof in-
 - (i) a *carpark required* to be *accessible*; and
 - (ii) a Class 3 building which contains an *accessible sole-occupancy unit* or accommodation; and

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- (iii) a carparking area on the same allotment as a building *required to be accessible* where more than 10 carparking spaces are provided; and
- (b) comply with requirements for parking in AS 2890.1 for people with disabilities.

D3.6 Identification of access facility

In every Class 3, 5, 6, 7, 8, 9 and 10a building *required to be accessible*, signs incorporating the international symbol of access in accordance with AS 1428.1 must identify each *accessible*-

- (a) entrance; and
- (b) lift or bank of lifts; and
- (c) sanitary facility.

D3.7 Hearing augmentation - listening system

In a Class 9b *assembly building*, other than a *school* or an *early childhood centre*, any built-in amplifying system must be provided with a hearing augmentation-listening system complying with AS 1428.1 to aid persons with a hearing impairment.

SPECIFICATION **D1.12** NON-REQUIRED STAIRWAYS, RAMPS AND ESCALATORS

Deemed-to-Satisfy Provisions

1. Scope

This Specification contains the requirements to allow non-*required* stairways, ramps or escalators to connect any number of *storeys* in a Class 5 or 6 building. The requirements do not apply in an *atrium* or outside a building.

2. Requirements

An escalator, moving walkway or non-*required* non-*fire-isolated* *stairway* or pedestrian ramp must comply with the following:

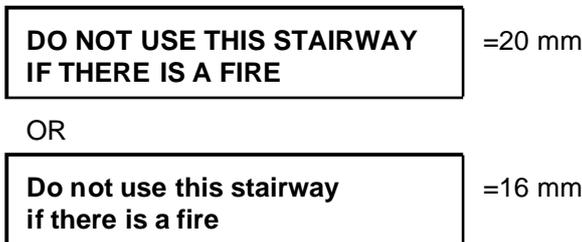
- (a) The escalator, walkway, stairway or ramp must be bounded by a *shaft* of:
 - (i) construction with an FRL of not less than 120/120/120 if *loadbearing* or - /120/120 if non-*loadbearing* and if of *lightweight construction* must comply with Specification C1.8; or
 - (ii) glazed construction with an FRL of not less than - /60/30 protected by a wall wetting system in accordance with Clause 2.4 of Specification G3.8.
- (b) The void of each non-*required* stairway, ramp or escalator must not connect more than 2 *storeys*.
- (c) Rising and descending escalators, walkways, stairways and ramps within one *shaft* must be separated by construction with an FRL of not less than - /60/30.
- (d) Openings into the *shaft* must be protected by fire doors with an FRL not less than - /60/30.
- (e) When the fire door is in the closed position, the floor or any covering over the floor beneath the fire door must not be *combustible*.
- (f) Fire doors must be fitted with smoke seals and the assembly must be tested in accordance with AS 1530.4.
- (g) Fire doors must be-
 - (i) closed and locked for security reasons; or
 - (ii) held open and be *automatic* closing.

[End of tab division]

Deemed-to-Satisfy Provisions

- (h) Smoke detectors must be installed on both sides of the opening, not more than 1.5 m horizontal distance from the opening.
- (i) In the closed position, fire doors must be openable on a single hand downward action or horizontal pushing action on a single device within the *shaft* and by key only from outside the *shaft*.
- (j) A warning sign must be displayed where it can readily be seen outside the *shaft* near all fire doors opening to the *shaft*. The sign must comply with the details and dimensions of Figure 2.

Figure 2
WARNING SIGN FOR NON-REQUIRED STAIRWAY, RAMP OR ESCALATOR



- (k) All doors opening into the *shaft* must be within 20 m of a *required exit*.
- (l) Signs showing the direction of the nearest *required exit* must be installed where they can be readily seen.
- (m) Materials attached to any wall, ceiling or floor within the *shaft* must have a *Spread-of-Flame Index* of 0 and a *Smoke-Developed Index* of not more than 5.
- (n) Emergency lighting must be installed in the *shaft* in accordance with E4.4.
- (o) No step or ramp may be closer to the threshold of the doorway than the width of the door leaf.

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SECTION **E**

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SERVICES AND EQUIPMENT

- E1 Fire Fighting Equipment**
- E2 Smoke Hazard Management**
- E3 Lift Installations**
- E4 Emergency Lighting, Exit Signs
and Warning Systems**

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PART E1 FIRE FIGHTING EQUIPMENT

OBJECTIVE

- EO1** The objective of this Part is to-
- (a) safeguard occupants from illness or injury while evacuating during a fire; and
 - (b) provide facilities for occupants and the *fire brigade* to undertake fire-fighting operations; and
 - (c) prevent the spread of fire between buildings.

Tas EO1(d)

FUNCTIONAL STATEMENT

- EF1.1** A building is to be provided with fire-fighting equipment to safeguard against fire spread-
- (a) to allow occupants time to evacuate safely without being overcome by the effects of fire; and
 - (b) so that occupants may undertake initial attack on a fire; and
 - (c) so that the *fire brigade* have the necessary equipment to undertake search, rescue, and fire-fighting operations; and
 - (d) to other parts of the building; and
 - (e) between buildings.

Tas EF1.2

PERFORMANCE REQUIREMENTS

- EP1.1** A fire hose reel system must be installed to the degree necessary to allow occupants to safely undertake initial attack on a fire appropriate to-
- (a) the size of the *fire compartment*, and
 - (b) the function or use of the building; and
 - (c) any other *fire safety systems* installed in the building; and
 - (d) the *fire hazard*.

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EP1.2 Fire extinguishers must be installed to the degree necessary to allow occupants to undertake initial attack on a fire appropriate to-

- (a) the function or use of the building; and
- (b) any other *fire safety systems* installed in the building; and
- (c) the *fire hazard*.

EP1.3 A hydrant system must be provided to the degree necessary to facilitate the needs of the *fire brigade* appropriate to-

- (a) fire-fighting operations; and
- (b) the *floor area* of the building; and
- (c) the *fire hazard*.

Application:

EP1.3 only applies to a building where a *fire brigade* is available to attend.

EP1.4 An *automatic* fire suppression system must be installed to the degree necessary to control the development and spread of fire appropriate to-

- (a) the size of the *fire compartment*; and
- (b) the function or use of the building; and
- (c) the *fire hazard*; and
- (d) the height of the building.

EP1.5 Suitable means of fire-fighting must be installed to a degree necessary in a building under construction to allow initial fire attack by construction workers and for the *fire brigade* to undertake attack on the fire appropriate to-

- (a) the *fire hazard*; and
- (b) the height the building has reached during its construction.

EP1.6 Suitable facilities must be provided to a degree necessary in a building to co-ordinate *fire brigade* intervention during an emergency appropriate to-

- (a) the function or use of the building; and
- (b) the floor area of the building; and
- (c) the height of the building.

Tas EP1.7

PART E1 FIRE FIGHTING EQUIPMENT

Deemed-to-Satisfy Provisions

Tas E1.0

E1.0 Deemed-to-Satisfy Provisions

Performance Requirements EP1.1 to EP1.6 are satisfied by complying with E1.1 to E1.10.

E1.1 * * * * *

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E1.2 * * * * *

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E1.3 Fire hydrants

- (a) A fire hydrant system must be provided to serve a building-
 - (i) having a total *floor area* greater than 500 m²; and
 - (ii) where a *fire brigade* service is available to attend a building fire.
- (b) The fire hydrant system-
 - (i) must be installed in accordance with AS 2419.1; and
 - (ii) where internal hydrants are provided, they must serve only the *storey* on which they are located except that a *sole-occupancy unit* -
 - (A) in a Class 2 or 3 building or Class 4 part may be served by a single hydrant located at the level of egress from that *sole-occupancy unit*, or
 - (B) of not more than 2 *storeys* in a Class 5, 6, 7, 8 or 9 building may be served by a single hydrant located at the level of egress from that *sole-occupancy unit* provided the hydrant can provide coverage to the whole of the *sole-occupancy unit*, and
 - (iii) where an on-site pumpset is provided to achieve the performance requirements of AS 2419.1, the pumpset must comprise-

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Deemed-to-Satisfy Provisions

- (A) two pumps with at least one driven by a compression ignition engine or an electric motor supplied from an emergency power generator; or
- (B) two pumps driven by electric motors connected to completely independent power sources; or
- (C) if connected to a reticulated water supply and installed in a building not greater than 25 m in *effective height*, one pump driven by-
 - (aa) a compression ignition engine; or
 - (bb) an electric motor supplied from an emergency power generator; or
 - (cc) an electric motor connected to two completely independent power sources through an automatic change-over facility; and
- (iv) any fixed on-site pumpset which is located within the building must be in a clearly indicated room-
 - (A) having direct egress to a road or *open space*; and
 - (B) if the building is not protected throughout with a sprinkler system complying with Specification E1.5, separated from the remainder of the building by construction having an FRL of not less than that *required* for a *fire wall* for the particular building classification; and
- (v) any fixed on-site pumpset which is located external to the building must be within a clearly indicated weatherproof enclosure having direct egress to a road or *open space*, and if within 6 m of the building-
 - (A) each wall of the enclosure exposed to the building; or
 - (B) that part of the *external wall* of the building which extends 2 m each side of the enclosure and 3 m above the enclosure; or
 - (C) a wall between the building and the enclosure which extends 2 m each side of the enclosure and 3 m above the enclosure,
 has an FRL of not less than that *required* for a *fire wall* for the particular building classification; and

SA E1.3(b)(iii)(C)

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Deemed-to-Satisfy Provisions

- (vi) where the water supply system is taken from a static source, suitable connections and vehicular access must be provided to permit *fire brigade* personnel to draw water from that source and a fire-service booster connection must be provided adjacent to allow boosting of the system; and
- (vii) must be designed to meet the operational requirements of the *fire brigade* for operating flows and pressures.

E1.4 Hose reels

- (a) A hose reel system must be provided-
 - (i) to serve the whole building where one or more internal hydrants are installed; or
 - (ii) where internal hydrants are not installed, to serve any *fire compartment* with a *floor area* greater than 500 m², and for the purposes of this clause, a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part is considered to be a *fire compartment*.
- (b) The hose reel system must-
 - (i) have hose reels installed in accordance with AS 2441; and
 - (ii) provide hose reels to serve only the *storey* at which they are located, except a *sole-occupancy unit*-
 - (A) in a Class 2 or 3 building or Class 4 part may be served by a single hose reel located at the level of egress from that *sole-occupancy unit*, and
 - (B) of not more than 2 *storeys* in a Class 5, 6, 7, 8 or 9 building may be served by a single hose reel located at the level of egress from that *sole-occupancy unit* provided the hose reel can provide coverage to the whole of the *sole-occupancy unit*, and
 - (iii) have hose reels provided so that the nozzle end of a fully extended fire hose fitted to the reel and laid to avoid any partitions or other physical barriers will reach every part of the floor of the *storey*; and

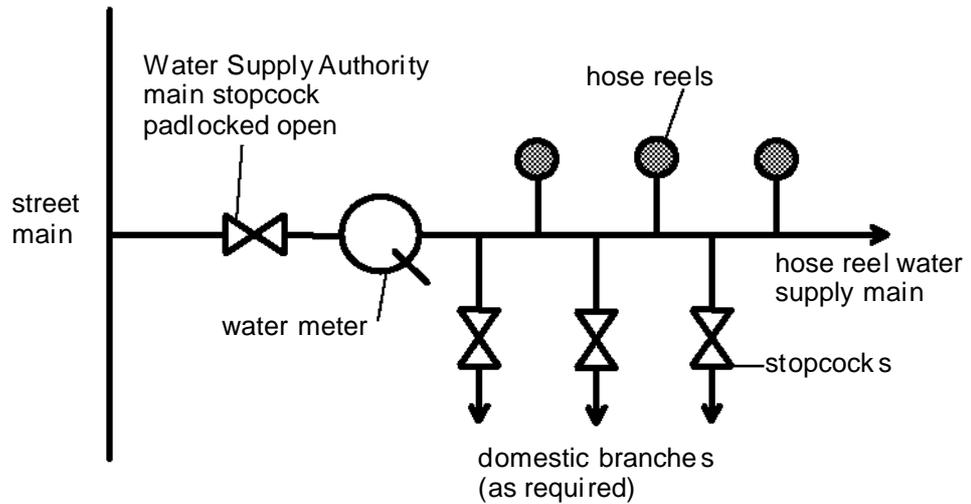
Deemed-to-Satisfy Provisions

- (iv) have hose reels provided in accordance with (iii) located-
- (A) externally; or
 - (B) internally within 4 m of an *exit*; or
 - (C) internally adjacent to a hydrant (other than one within a fire-isolated *exit*); or
 - (D) in any combination of (A), (B) and (C), so that the hose will not need to pass through doorways fitted with fire or smoke doors, except doorways referred to in C2.13, C3.11 or C3.13 and doorways in walls referred to in C2.12; and
- (v) where connected to a metered water supply-
- (A) maintain the *required* flow rate and at the most hydraulically disadvantaged hose reel; and
 - (B) have a water meter and street supply to the allotment with a nominal diameter of not less than 25 mm; and
 - (C) have a water supply pipework reticulation arrangement in accordance with Figure E1.4; and
 - (D) have any system valve which can isolate flow in the hose reel water supply main-
 - (aa) secured in the open position by a padlocked metal strap; and
 - (bb) labelled with an engraved non-ferrous metal tag with 8 mm upper case wording:
**FIRE SERVICE VALVE-
 CLOSE ONLY TO SERVICE FIRE HOSE REELS;**
 and
- (vi) where supplied by a fire hose reel main greater than 25 mm nominal bore and connected to a fire hydrant main, have a valve in accordance with (v)(D) fitted at the connection to that main and wherever practicable be located in a *fire-isolated stairway, passageway or ramp*, or outside the building.

SA E1.4(c)

Deemed-to-Satisfy Provisions

Figure E1.4
WATER SUPPLY RETICULATION: COMBINED SERVICES



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E1.5 Sprinklers

A sprinkler system must-

- (a) be installed in a building when *required* by Table E1.5; and
- (b) comply with Specification E1.5.

NT Table E1.5

Table E1.5
REQUIREMENTS FOR SPRINKLERS

Occupancy	When sprinklers are required
All classes-	In buildings more than 25 m in <i>effective height</i> .
(a) including an <i>open-deck carpark</i> within a multiclassified building; but	
(b) excluding an <i>open-deck carpark</i> being a separate building	
Class 6	In <i>fire compartments</i> where either of the following apply:
	(a) A <i>floor area</i> of more than 3500 m ² .
	(b) A <i>volume</i> more than 21 000 m ³ .
Theatres, Stages & Public Halls	see Part H1
Atrium construction	see Part G3
Large isolated buildings	see Clause C2.3

Continued

Deemed-to-Satisfy Provisions

Table E1.5 Continued	
Occupancy	When sprinklers are required
<p><i>Carparks, other than open-deck carparks</i></p> <p>Occupancies of excessive hazard (see Note 3)</p>	<p>Where more than 40 vehicles are accommodated.</p> <p>In <i>fire compartments</i> where either of the following apply:</p> <p>(a) A <i>floor area</i> of more than 2000 m².</p> <p>(b) A volume of more than 12 000 m³.</p>
<p>Notes:</p> <ol style="list-style-type: none"> 1. See Specification C1.1 for use of sprinklers in Class 2 buildings and <i>carparks</i> generally. 2. See Part E2 for use of sprinklers to satisfy Smoke Hazard Management provisions. 3. For the purposes of this Table, occupancies of excessive <i>fire hazard</i> comprise buildings which contain- <ol style="list-style-type: none"> (a) hazardous processes or storage including the following: <ol style="list-style-type: none"> (i) Aircraft hangars. (ii) Cane furnishing manufacture, processing and storage. (iii) Fire-lighter and fireworks manufacture and warehousing. (iv) Foam plastic and foam plastic goods manufacture, processing and warehousing, eg., furniture factory. (v) Hydrocarbon based sheet product, manufacture, processing and warehousing, eg., vinyl floor coverings. (vi) Woodwool and other flammable loose fibrous material manufacture. (b) <i>combustible</i> goods with an aggregate volume exceeding 1000 m³ and stored to a height greater than 4 m including the following: <ol style="list-style-type: none"> (i) Aerosol packs with flammable contents. (ii) Carpets and clothing. (iii) Electrical appliances. (iv) <i>Combustible</i> compressed fibreboards (low and high density) and plywoods. (v) <i>Combustible</i> cartons, irrespective of content (vi) Esparto and other fibrous <i>combustible</i> material. (vii) Furniture including timber, cane and composite, where foamed rubber or plastics are incorporated. (viii) Paper storage (all forms of new or waste) eg., bales, sheet, horizontal or vertical rolls, waxed coated or processed. (ix) Textiles raw and finished, eg, rolled cloth, clothing and manchester. 	
Continued	

Vic Table E1.5
Note 3

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Table E1.5 Continued

<ul style="list-style-type: none"> (x) Timber storage including sheets, planks, boards, joists and cut sizes. (xi) Vinyl, plastic, foamed plastic, rubber and other <i>combustible</i> sheets, offcuts and random pieces and rolled material storage, eg., carpet, tar paper, linoleum, wood veneer and foam mattresses. (xii) All materials having wrappings or preformed containers of foamed plastics.
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E1.6 Portable fire extinguishers

Portable fire extinguishers must be provided as listed in Table E1.6 and must be selected, located and distributed in accordance with AS 2444.

E1.7 * * * * *

This clause has deliberately been left blank.

E1.8 Fire control centres

A fire control centre facility in accordance with Specification E1.8 must be provided in-

- (a) a building with an *effective height* of more than 25 m; and
- (b) a Class 6, 7, 8 or 9 building with a total *floor area* of more than 18 000 m².

E1.9 Fire precautions during construction

In a building under construction-

- (a) not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each *storey* adjacent to each *required exit* or temporary stairway or *exit*; and
- (b) after the building has reached an *effective height* of 12 m-
 - (i) the *required* hydrants and hose reels must be operational in at least every *storey* that is covered by the roof or the floor structure above, except the 2 uppermost *storeys*; and
 - (ii) any *required* booster connections must be installed.

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Table E1.6 REQUIREMENTS FOR EXTINGUISHERS (Note 3)	
Occupancy class	Risk class (as defined in AS 2444)
<p>General provisions - Class 2 to 9 (except within <i>sole occupancy units</i> of a Class 2 or 3 building or Class 4 part)</p> <p>Specific provisions (in addition to general provisions)-</p> <ul style="list-style-type: none"> (a) Class 9a <i>health-care buildings</i> (b) Class 3 parts of detention and correctional occupancies (c) Class 3 accommodation for children, aged persons and people with disabilities 	<ul style="list-style-type: none"> (a) To cover Class A (E) or (E) Classification fire risks associated with emergency services switchboards. (Note 1) (b) To cover Class F fire risks involving cooking oils and fats in kitchens. (c) To cover Class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used (not including that held in fuel tanks of vehicles). (d) To cover Class A fire risks in normally occupied <i>fire compartments</i> less than 500 m² not provided with hose reels (excluding <i>open deck car parks</i>). <p>To cover Class A and (E) Classification fire risks. (Note 2)</p>
<p>Notes</p> <ul style="list-style-type: none"> 1. For the purposes of this Table, an emergency services switchboard is one which sustains emergency equipment operating in the emergency mode. 2. An (E) Classification fire extinguisher need only be located at each nurses', supervisors' station or the like. 3. Additional extinguishers may be required to cover fire risks in relation to special hazards provided for in E1.10. 	

E1.10 Provision for special hazards

Suitable additional provision must be made if special problems of fighting fire could arise because of-

- (a) the nature or quantity of materials stored, displayed or used in a building or on the allotment; or
- (b) the location of the building in relation to a water supply for fire-fighting purposes.

Tas E1.101

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SPECIFICATION **E1.5** FIRE SPRINKLER SYSTEMS

Deemed-to-Satisfy Provisions

1. Scope

This Specification sets out requirements for the design and installation of fire sprinkler systems.

2. Adoption of AS 2118

Subject to this Specification, a sprinkler system must comply with-

- (a) AS 2118.1; or
- (b) for a Class 2 or 3 building: AS 2118.4 as applicable; or
- (c) for a combined sprinkler and hydrant system: AS 2118.6.

3. Separation of sprinklered and non-sprinklered areas

Where a part of a building is not protected with sprinklers, the sprinklered and non-sprinklered parts must be fire-separated with a wall or floor which must-

- (a) comply with any specific requirement of the deemed-to-satisfy provisions of the BCA; or
- (b) where there is no specific requirement, comply with the relevant part of AS 2118.

4. Protection of openings

Any openings, including those for service penetrations, in construction separating sprinklered and non-sprinklered parts of a building, including the construction separating the areas nominated as permitted exceptions in AS 2118.1, must be protected in accordance with of the deemed-to-satisfy provisions of Part C3.

5. Fast response sprinklers

Fast response sprinklers may be installed only if they are suitable for the type of application proposed and it is demonstrated that the sprinkler system is designed to accommodate their use.

*Deemed-to-Satisfy Provisions***6. Sprinkler valve enclosures**

- (a) Sprinkler alarm valves must be located in a secure room or enclosure which has direct egress to a road or *open space*.
- (b) All sprinkler valve rooms and enclosures must be secured with a system suitable for use by the *fire brigade*.

7. Water supply

The Grade of water supply to a *required* sprinkler system must not be less than-

- (a) for a building greater than 25 m in *effective height*, Grade 1; and
- (b) for a building not greater than 25 m in *effective height*, at least Grade 3.

NSW Spec E1.5 7(a)

8. Building occupant warning system

A sprinkler system must be connected to and activate a warning system complying with Clause 8.7 of AS 1670 to sound through all occupied areas except-

- (a) in a Class 2 or 3 building or Class 4 part, the sound pressure levels need not be measured within a *sole-occupancy unit* if a level of not less than 85 dB(A) is provided at the door providing access to the *sole-occupancy unit*; and
- (b) in a Class 3 building used as a *residential aged care building*, the system-
 - (i) must be arranged to provide a warning for staff; and
 - (ii) in occupant areas, the alarm may be adjusted in volume and content to minimise trauma consistent with the type and condition of occupants.
- (c) in a Class 9a building in a *patient care area*, the system-
 - (i) must be arranged to provide a warning for staff; and
 - (ii) in a *ward area*, the alarm may be adjusted in volume and content to minimise trauma consistent with the type and condition of patients; and

*Deemed-to-Satisfy Provisions***9. Connection to other systems**

Where a smoke hazard management system is installed and is actuated by smoke detectors, the sprinkler system must, wherever practicable, be arranged to also activate the smoke hazard management system.

10. Anti-tamper devices

Where a sprinkler system is installed in a theatre, public hall or the like, any valves provided to control sprinklers over any *stage* area must be fitted with anti-tamper devices connected to a monitoring panel at the location normally used by the *stage* manager.

11. Sprinkler systems in carparks

The sprinkler system protecting a *carpark* complying with Table 3.9 of Specification C1.1 in a multiclassified building must-

- (a) be independent of the sprinkler system protecting any part of the building not used as a *carpark*; or
- (b) if forming part of a sprinkler system protecting a part of the building not used as a *carpark*, be designed such that the section protecting the non-*carpark* part can be isolated without interrupting the water supply or otherwise affecting the effective operation of the section protecting the *carpark*.

SPECIFICATION **E1.8** FIRE CONTROL CENTRES

Deemed-to-Satisfy Provisions

1. Scope

This Specification describes the construction and content of *required* fire control centres or rooms.

2. Purpose and content

A fire control centre or room must-

- (a) provide an area from which fire-fighting operations or other emergency procedures can be directed or controlled; and
- (b) contain controls, panels, telephones, furniture, equipment and the like associated with the *required* fire services in the building; and
- (c) not be used for any purpose other than the control of-
 - (i) fire-fighting activities; and
 - (ii) other measures concerning the occupant safety or security.

3. Location of fire control centre or room

A fire control centre or room must be so located in a building that egress from any part of its floor, to a public road or *open space*, does not involve changes in level which in aggregate exceed 300 mm.

4. Construction

A fire control centre in a building more than 50 m in *effective height* must be in a separate room where-

- (a) the enclosing construction is of concrete, masonry or the like, sufficiently impact resistant to withstand the impact of any likely falling debris, and with an FRL of not less than 120/120/120; and
- (b) any material used as a finish, surface, lining or the like within the room complies with the requirements of Specification C1.10 for *fire-isolated stairways*, and

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- (c) services, pipes, ducts and the like that are not directly *required* for the proper functioning of the fire control room do not pass through it; and
- (d) openings in the walls, floors or ceiling which separate the room from the interior of the building are confined to doorways, ventilation and other openings for services necessary for the proper functioning of the facility.

5. Protection of openings

Openings permitted by Clause 4 must be protected as follows:

- (a) Openings for *windows*, doorways, ventilation, service pipes, conduits and the like, in an *external wall* of the building that faces a public road or *open space*, must be protected in accordance with the deemed-to-satisfy provisions of Part C3.
- (b) Openings in the floors, ceilings and *internal walls* enclosing a fire control room must, except for doorways, be protected in accordance with the deemed-to-satisfy provisions of Part C3.
- (c) A door opening in the *internal walls* enclosing a fire-control room, must be fitted with a self closing - /120/30 smoke sealed fire door.
- (d) Openings associated with natural or mechanical ventilation must-
 - (i) not be made in any ceiling or floor immediately above or below the fire control room; and
 - (ii) be protected by a - /120/ - fire damper if the opening is for a duct through a wall *required* to have an FRL, other than an *external wall*.

6. Exit doors

- (a) *Required* doors to a fire control room must open into the room, be lockable and located so that persons using escape routes from the building will not obstruct or hinder access to the room.
- (b) The fire control room must be accessible via two paths of travel-
 - (i) one from the front entrance of the building; and

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- (ii) one direct from a public place or *fire-isolated passageway* which leads to a public place and has a door with an FRL of not less than - /120/30.

7. Size and contents

- (a) A fire control room must contain not less than-
 - (i) a Fire Indicator Panel and necessary control switches and visual status indication for all *required* fire pumps, smoke control fans and other *required* fire safety equipment installed in the building; and
 - (ii) a telephone directly connected to an external telephone exchange; and
 - (iii) a blackboard or whiteboard not less than 1200 mm wide x 1000 mm high; and
 - (iv) a pin-up board not less than 1200 mm wide x 1000 mm high; and
 - (v) a raked plan layout table of a size suitable for laying out the plans provided under (vi); and
 - (vi) colour-coded, durable, tactical fire plans.
- (b) In addition, a fire control room may contain-
 - (i) master emergency control panels, lift annunciator panels, remote switching controls for gas or electrical supplies and emergency generator backup; and
 - (ii) building security, surveillance and management systems if they are completely segregated from all other systems.
- (c) A fire control room must-
 - (i) have a *floor area* of not less than 10 m² and the length of any internal side must be not less than 2.5 m; and
 - (ii) if only the minimum prescribed equipment is installed - have a net floor area of not less than 8 m² with a clear space of not less than 1.5 m² in front of the Fire Indicator Panel; and
 - (iii) if additional equipment is installed - have an additional area of not less than 2 m² net floor area for each additional facility and a clear space of not less than 1.5 m² in front of each additional control or indicator panel,

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and the area *required* for any path of travel through the room to other areas must be provided in addition to the requirements (ii) and (iii).

8. Ventilation and power supply

A fire control room must be ventilated by-

- (a) natural ventilation from a *window* or doorway in an *external wall* of the building which opens directly into the fire control room from a roadway or *open space*; or
- (b) a pressurisation system that only serves the fire control room, and-
 - (i) is installed in accordance with AS 1668.1 as though the room is a *fire-isolated stairway*; and
 - (ii) is activated *automatically* by operation of the fire alarm, or sprinkler system complying with Specification E1.5, installed in the building and manually by an over-riding control in the room; and
 - (iii) provides a flow of fresh air through the room of not less than 30 air changes per hour when the system is operating and any door to the room is open; and
 - (iv) has fans, motors and ductwork that form part of the system but not contained within the fire control room protected by enclosing construction with an FRL of not less than 120/120/120; and
 - (v) has any electrical supply to the fire control room or equipment necessary for its operation connected to the supply side of the main disconnection switch for the building,

and no openable devices other than necessary doorways, pressure controlled relief louvres and *windows* that are openable by a key, must be constructed in the fire control room.

9. Sign

The external face of the door to the fire control room must have a sign with the words-

FIRE CONTROL ROOM

in letters of not less than 50 mm high and of a colour which contrasts with that of the background.

*Deemed-to-Satisfy Provisions***10. Lighting**

Emergency lighting in accordance with the deemed-to-satisfy provisions of Part E4 must be provided in a fire control room, except that an illumination level of not less than 400 lux must be maintained at the surface of the plan table.

11. Equipment not permitted within a fire control centre or room

An internal combustion engine, pumps, sprinkler control valves, pipes and pipe fittings must not be located in a fire control centre or room, but may be located in rooms accessed through the fire control centre or room.

12. Ambient sound level

The ambient sound level within the fire control centre or room measured when all fire safety equipment is operating in the manner in which it operates in an emergency, must not exceed 65 dB(A), when determined in accordance with AS 2107.

PART E2 SMOKE HAZARD MANAGEMENT

OBJECTIVE

- EO2** The objective of this Part is to-
- (a) safeguard occupants from illness or injury by warning them of a fire so that they may safely evacuate; and
 - (b) safeguard occupants from illness or injury while evacuating during a fire.

FUNCTIONAL STATEMENT

- EF2.1** A building is to be provided with safeguards so that-
- (a) occupants are warned of a fire in the building so that they may safely evacuate; and
 - (b) occupants have time to safely evacuate before the environment in any *evacuation route* becomes untenable from the effects of fire.

PERFORMANCE REQUIREMENTS

- EP2.1** In a building providing sleeping accommodation, occupants must be provided with *automatic* warning on the detection of smoke so they may evacuate in the event of a fire to a *safe place*.

Application:

EP2.1 only applies to a Class 2, 3 or 9a building or Class 4 part.

- EP2.2** (a) In the event of a fire in a building the conditions in any *evacuation route* must be maintained for the period of time occupants take to evacuate the part of the building so that-
- (i) the temperature will not endanger human life; and

- (ii) the level of visibility will enable the *evacuation route* to be determined; and
 - (iii) the level of toxicity will not endanger human life.
- (b) The period of time occupants take to evacuate referred to in (a) must be appropriate to-
- (i) the number, mobility and other characteristics of the occupants; and
 - (ii) the function or use of the building; and
 - (iii) the travel distance and other characteristics of the building; and
 - (iv) the *fire load*; and
 - (v) the potential *fire intensity*; and
 - (vi) the *fire hazard*; and
 - (vii) any active *fire safety systems* installed in the building; and
 - (viii) *fire brigade* intervention.

Limitation:

EP2.2 does not apply to an *open-deck carpark* or *open spectator stand*.

PART E2 SMOKE HAZARD MANAGEMENT

Deemed-to-Satisfy Provisions

E2.0 Deemed-to-Satisfy Provisions

Performance requirements EP2.1 and EP2.2 are satisfied by complying with-

- (a) E2.1 to E2.3; and
- (b) in a building containing an *atrium*, Part G3.

E2.1 Application of Part

- (a) The deemed-to-satisfy provisions of this Part do not apply to any *open deck carpark* or *open spectator stand*.
- (b) The smoke exhaust and *smoke-and-heat vent* provisions of this Part do not apply to any area not used by occupants for an extended period of time such as a storeroom with a floor area less than 30 m², *sanitary compartment*, plant room or the like.

E2.2 General requirements

- (a) A building must comply with (b), (c), (d) and-
 - (i) Table E2.2a as applicable to Class 2 to 9 buildings such that each separate part complies with the relevant provisions for the classification; and
 - (ii) Table E2.2b as applicable to Class 6 and 9b buildings such that each separate part complies with the relevant provisions for the classification.
- (b) An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one *fire compartment* to another *fire compartment* or operates in a manner that may unduly contribute to the spread of smoke from one *fire compartment* to another *fire compartment* must-
 - (i) be designed and installed to operate as a smoke control system in accordance with AS 1668.1; or
 - (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the *fire compartments* served; and

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- (B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close *automatically* by smoke detectors complying with Clause 4.15 of AS 1668.1; and for the purposes of this provision, each *sole-occupancy unit* in a Class 2 or 3 building is treated as a separate *fire compartment*.
- (c) Miscellaneous air-handling systems covered by Section 7 of AS 1668.1 serving more than one *fire compartment* (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard.
- (d) A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate AS 1668.1 systems that are provided for zone smoke control and *automatic* air pressurisation for fire-isolated *exits*.

E2.3 Provision for special hazards

Additional smoke hazard management measures may be necessary due to the-

- (a) special characteristics of the building; or
 (b) special function or use of the building; or
 (c) special type or quantity of materials stored, displayed or used in a building; or
 (d) special mix of classifications within a building or *fire compartment*,

which are not addressed in Tables E2.2a and E2.2b.

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**Table E2.2a
GENERAL PROVISIONS**

FIRE-ISOLATED EXITS

A required-

- (a) *fire-isolated stairway*, including any associated *fire-isolated passageway* or *fire-isolated ramp* serving-
 - (i) any *storey* above an *effective height* of 25m; or
 - (ii) more than 2 below ground *storeys*, not counted in the *rise in storeys* in accordance with C1.2, or
 - (iii) an *atrium*; or
 - (iv) a Class 9a building with a *rise in storeys* of more than 2, and
- (b) *fire-isolated passageway* or *fire-isolated ramp* with a length of travel more than 60 m to a road or *open space*,

must be provided with-

- (c) an *automatic* air pressurisation system for *fire-isolated exits* in accordance with AS 1668.1; or
- (d) open access ramps or balconies in accordance with D2.5.

Notes:

1. An *automatic* air pressurisation system for *fire-isolated exits* applies to the entire *exit*.
2. Refer D1.7(d) for pressurisation of a *fire-isolated exit* having more than 2 access doorways from within the same *storey*.

BUILDINGS MORE THAN 25 M IN EFFECTIVE HEIGHT

CLASS 2 AND 3 BUILDINGS AND CLASS 4 PART OF A BUILDING

A Class 2 and 3 building or part of a building and Class 4 part of a building must be provided with an *automatic* smoke detection and alarm system complying with Specification E2.2a.

Note: Refer C2.14 for division of *public corridors* greater than 40 m in length.

CLASS 5, 6, 7, 8 and 9b BUILDINGS (other than a carpark)

A Class 5, 6, 7, 8 and 9b building or part of a building must be provided with a zone smoke control system in accordance with AS 1668.1.

Note: Refer Table E2.2b for Specific Provisions applicable to a Class 6 (in a *fire compartment* having a *floor area* of more than 2000 m²) and 9b building or part of a building.

CLASS 9a BUILDINGS

A Class 9a building must be provided with-

- (a) an *automatic* smoke detection and alarm system complying with Specification E2.2a; and
- (b) a zone smoke control system in accordance with AS 1668.1.

Note: A building more than 25 m in *effective height* requires a sprinkler system under E1.5.

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Table E2.2a continued
BUILDINGS NOT MORE THAN 25 M IN EFFECTIVE HEIGHT
CLASS 2 AND 3 BUILDINGS AND CLASS 4 PART
<p>A Class 2 and 3 building or part of a building and Class 4 part of a building-</p> <ul style="list-style-type: none"> (a) must be provided with an <i>automatic</i> smoke detection and alarm system complying with Specification E2.2a; and (b) where a <i>required fire-isolated stairway</i> serving the Class 2 or 3 parts also serves one or more <i>storeys</i> of Class 5, 6, 7 (other than an <i>open deck carpark</i>), 8 or 9b parts- <ul style="list-style-type: none"> (i) the <i>fire-isolated stairway</i>, including any associated <i>fire-isolated passageway</i> or <i>fire-isolated ramp</i>, must be provided with an <i>automatic</i> air pressurisation system for fire-isolated <i>exits</i> in accordance with AS 1668.1; or (ii) the Class 5, 6, 7 (other than an <i>open deck carpark</i>), 8 and 9b parts must be provided with- <ul style="list-style-type: none"> (A) an <i>automatic smoke</i> detection and alarm system complying with Specification E2.2a; or (B) a sprinkler system complying with Specification E1.5; and (c) where a <i>required fire-isolated stairway</i> serving the Class 4 part also serves one or more <i>storeys</i> of Class 5, 6, 7 (other than an <i>open deck carpark</i>), 8 or 9b parts- <ul style="list-style-type: none"> (i) a system complying with (b)(i) or (b)(ii) must be installed; or (ii) a smoke alarm or detector system complying with Specification E2.2a must be provided except that alarms or detectors need only be installed adjacent to each doorway into each <i>fire-isolated stairway</i> (set back horizontally from the doorway by a distance of not more than 1.5 m) to initiate a building occupant warning system for the Class 4 part. <p>Notes: 1. Refer C2.14 for division of <i>public corridors</i> greater than 40 m in length. 2. Refer Table E2.2b for Specific Provisions applicable to a Class 6 (in a <i>fire compartment</i> having a <i>floor area</i> of more than 2000 m²) and 9b building or part of a building.</p>
CLASS 5, 6, 7, 8 and 9b BUILDINGS (other than a carpark)
<p>In a-</p> <ul style="list-style-type: none"> (a) Class 5 or 9b <i>school</i> building or part of a building having a <i>rise in storeys</i> of more than 3; or (b) Class 6, 7, 8 or 9b (other than a <i>school</i>) or part of a building having a <i>rise in storeys</i> of more than 2; or (c) building having a <i>rise in storeys</i> of more than 2 and containing- <ul style="list-style-type: none"> (i) a Class 5 or 9b <i>school</i> part; and (ii) a Class 6, 7, 8 or 9b (other than a <i>school</i>) part, the building must be provided with- <ul style="list-style-type: none"> (d) in each <i>required fire-isolated stairway</i>, including any associated <i>fire-isolated passageway</i> or <i>fire-isolated ramp</i>, an <i>automatic</i> air pressurisation system for fire-isolated <i>exits</i> in accordance with AS 1668.1; or (e) a zone smoke control system in accordance with AS 1668.1, if the building has more than one <i>fire compartment</i>; or (f) an <i>automatic</i> smoke detection and alarm system complying with Specification E2.2a; or (g) a sprinkler system complying with Specification E1.5.
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Table E2.2a continued

CLASS 5, 6, 7, 8 and 9b BUILDINGS (other than a carpark) continued

- Notes:
1. Refer Table E2.2b for Specific Provisions applicable to a Class 6 (in a *fire compartment* having a *floor area* of more than 2000 m²) and 9b building or part of a building.
 2. Refer provisions under Class 2 and 3 buildings and Class 4 part in this Table where a Class 5, 6, 7, 8 and 9b building contains a Class 2, 3 or 4 part.

CLASS 9a BUILDINGS

- A Class 9a building or a building containing a Class 9a part must be provided throughout with-
- (a) an *automatic* smoke detection and alarm system complying with Specification E2.2a; and
 - (b) *automatic* shutdown of any air-handling system which does not form part of a zone smoke control system (other than individual room units with a capacity not more than 1000 l/s, systems serving critical treatment areas and miscellaneous exhaust air systems installed in accordance with Section 7 of AS 1668.1) on the activation of-
 - (i) smoke detectors installed in accordance with (a); and
 - (ii) any other installed fire detection and alarm system including a sprinkler system complying with Specification E1.5; and
 - (c) in a building having a *rise in storeys* of more than 2 and not more than 25 m *effective height*-
 - (i) a zone smoke control system in accordance with AS 1668.1; or
 - (ii) a sprinkler system complying with Specification E1.5 throughout with residential sprinkler heads in *patient care* areas.

Note: Refer C2.5(d) provision for smoke dampers.

BASEMENTS (other than carparks)

- A basement, not counted in the *rise in storeys* in accordance with C1.2, must-
- (a) comply with measures in accordance with this Table applicable to the building generally; and
 - (b) where the basement has a total *floor area* of more than 2000 m², be provided with-
 - (i) if not more than 2 below ground *storeys*-
 - (A) a zone smoke control system in accordance with AS 1668.1, if the basement has more than one fire compartment; or
 - (B) an automatic smoke detection and alarm system complying with Specification E2.2a; or
 - (C) a sprinkler system complying with Specification E1.5; or
 - (ii) if more than 2 below ground *storeys*, a sprinkler system complying with Specification E1.5.

- Notes:
1. Refer Table E2.2b for Specific Provisions applicable to a Class 6 (in a *fire compartment* having a *floor area* of more than 2000 m²) and 9b building or part of a building.
 2. Basements with more than 3 below ground *storeys* or containing Class 6 or 9b occupancies with a large number of occupants may require special consideration in accordance with E2.3.

Continued

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<i>Deemed-to-Satisfy Provisions</i>	
Table E2.2a continued	
CARPARKS	
<p>A <i>carpark</i>, including a basement carpark, provided with a mechanical ventilation system in accordance with AS 1668.2 must comply with Clause 7.6 of AS 1668.1 and-</p> <ul style="list-style-type: none"> (a) fans with metal blades suitable for operation at normal temperature may be used; and (b) the electrical power and control cabling need not be fire rated. 	
ATRIUMS	
Refer Part G3.	
NSW Table E2.2b	
Table E2.2b - SPECIFIC PROVISIONS	
CLASS 6 BUILDINGS - IN FIRE COMPARTMENTS MORE THAN 2000 m²	
CLASS 6 BUILDINGS (not containing an enclosed common walkway or mall serving more than one shop)	
<ul style="list-style-type: none"> (a) Each <i>fire compartment</i> having a <i>floor area</i> of more than 2000 m², other than in a shop described in (b), must be provided with- <ul style="list-style-type: none"> (i) an <i>automatic</i> smoke exhaust system complying with Specification E2.2b; or (ii) <i>automatic smoke-and-heat vents</i> complying with Specification E2.2c, if the building is <i>single storey</i>; or (iii) if the <i>floor area</i> of the <i>fire compartment</i> is not more than 3500 m² and the building- <ul style="list-style-type: none"> (A) is <i>single storey</i>, an <i>automatic</i> smoke detection and alarm system complying with Specification E2.2a; or (B) has a <i>rise in storeys</i> of not more than 2, a sprinkler system complying with Specification E1.5. (b) A shop within the <i>fire compartment</i> need not comply with (a) if it- <ul style="list-style-type: none"> (i) has a <i>floor area</i> of not more than 2000 m²; and (ii) is <i>single storey</i> with a main public entrance opening to a road or <i>open space</i>. 	
CLASS 6 BUILDINGS (containing an enclosed common walkway or mall serving more than one shop)	
<ul style="list-style-type: none"> (a) Each <i>fire compartment</i> having a <i>floor area</i> of more than 2000 m² <ul style="list-style-type: none"> (i) in the enclosed common walkway or mall; and (ii) in a shop with a floor area of more than 1000 m², opening onto the enclosed common walkway or mall; and (iii) in a shop, other than a shop described in (c), not opening onto the enclosed common walkway or mall, must be provided with- <ul style="list-style-type: none"> (A) an <i>automatic</i> smoke exhaust system complying with Specification E2.2b; or (B) <i>automatic smoke-and-heat vents</i> complying with Specification E2.2c, if the building is <i>single storey</i>; or (b) if the <i>floor area</i> of the <i>fire compartment</i> is not more than 3500 m² and the building has a <i>rise in storeys</i> of not more than 2, a sprinkler system complying with Specification E1.5. 	
Continued	

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Deemed-to-Satisfy Provisions

Table E2.2b continued

CLASS 6 BUILDINGS (containing an enclosed common walkway or mall serving more than one shop) continued

- (c) A shop within the *fire compartment* need not comply with (a)(iii) if it-
- (i) has a *floor area* of not more than 2000 m²; and
 - (ii) is *single storey* with a main public entrance opening to a road or *open space*.

Note: A *fire compartment* having a *floor area* of more than 3500 m² in a Class 6 building requires a sprinkler system under E1.5.

CLASS 9b - ASSEMBLY BUILDINGS

NIGHTCLUBS and DISCOTHEQUES AND THE LIKE

A building or part of a building used as a nightclub, discotheque and the like must be provided with-

- (a) *automatic* shutdown of any air-handling system (other miscellaneous exhaust air systems installed in accordance with Section 7 of AS 1668.1) which does not form part of the smoke hazard management system, on the activation of-
 - (i) smoke detectors installed complying with Specification E2.2a; and
 - (ii) any other installed fire detection and alarm system, including a sprinkler system complying with Specification E1.5; and
- (b)
 - (i) an *automatic* smoke exhaust system complying with Specification E2.2b; or
 - (ii) *automatic smoke-and-heat vents* complying with Specification E2.2c, if the building is *single storey*; or
 - (iii) a sprinkler system complying with Specification E1.5 with fast response sprinkler heads.

EXHIBITION HALLS

A building or part of a building used as an exhibition hall must be provided with-

- (a) *automatic* shutdown of any air-handling system (other than miscellaneous exhaust air systems installed in accordance with Section 7 of AS 1668.1) which does not form part of the smoke hazard management system, on the activation of-
 - (i) smoke detectors installed complying with Specification E2.2a; and
 - (ii) any other installed fire detection and alarm system, including a sprinkler system complying with Specification E1.5; and
- (b) where the *floor area* is more than 2000 m² and not more than 3500 m²-
 - (i) an *automatic* smoke exhaust system complying with Specification E2.2b; or
 - (ii) *automatic smoke-and-heat vents* complying with Specification E2.2c, if the building is *single storey*; or
 - (iii) a sprinkler system complying with Specification E1.5; and
- (c) where the *floor area* is more than 3500 m², a sprinkler system complying with Specification E1.5 and-
 - (i) an *automatic* smoke exhaust system complying with Specification E2.2b; or
 - (ii) *automatic smoke-and-heat vents* complying with Specification E2.2c, if the building is *single storey*.

Continued

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Deemed-to-Satisfy Provisions

Table E2.2b continued

THEATRES and PUBLIC HALLS

A building or part of a building used as a theatre or public hall which-

- (a) is a *school* assembly, church or community hall, and has a *stage* and any *backstage* area with a total *floor area* of more than 300 m²; or
- (b) is not a *school* assembly, church or community hall, and has a *stage* and any *backstage* area with a total *floor area* of more than 200 m²; or
- (c) has a *stage* with an associated rigging loft-
must be provided with-
 - (i) an *automatic* smoke exhaust system complying with Specification E2.2b; or
 - (ii) *automatic smoke-and-heat vents* complying with Specification E2.2c, if the building is *single storey*.

THEATRES and PUBLIC HALLS (not listed above) INCLUDING LECTURE THEATRES AND CINEMA/AUDITORIUM COMPLEXES

A building or part of a building used as a theatre and public hall (not listed above) including a lecture theatre and cinema/auditorium complex-

- (a) must be provided with *automatic* shutdown of any air-handling system (other miscellaneous exhaust air systems installed in accordance with Section 7 of AS 1668.1) which does not form part of the smoke hazard management system, on the activation of-
 - (i) smoke detectors installed complying with Specification E2.2a; and
 - (ii) any other installed fire detection and alarm system, including a sprinkler system complying with Specification E1.5; and
- (b) other than in the case of a *school* lecture theatre, where the *floor area* of the *fire compartment* is more than 2000 m²-
 - (i) an *automatic* smoke exhaust system complying with Specification E2.2b; or
 - (ii) *automatic smoke-and-heat vents* complying with Specification E2.2c, if the building is *single storey*; or
 - (iii) if the *floor area* of the *fire compartment* is not more than 5000 m² and the building has a *rise in storeys* of not more than 2-
 - (A) an *automatic* smoke detection and alarm system complying with Specification E2.2a; or
 - (B) a sprinkler system complying with Specification E1.5.

Continued

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Deemed-to-Satisfy Provisions

Table E2.2b continued
OTHER ASSEMBLY BUILDINGS (not listed above) and EXCLUDING SCHOOLS
<p>(a) Each <i>fire compartment</i>, other than one in a building described in (b), having a <i>floor area</i> of more than 2000 m² must be provided with-</p> <ul style="list-style-type: none"> (i) an <i>automatic</i> smoke exhaust system complying with Specification E2.2b; or (ii) <i>automatic smoke-and-heat vents</i> complying with Specification E2.2c, if the building is <i>single storey</i>; or (iii) if the <i>floor area</i> of the <i>fire compartment</i> is not more than 5000 m² and the building has a <i>rise in storeys</i> of not more than 2- <ul style="list-style-type: none"> (A) an <i>automatic</i> smoke detection and alarm system complying with Specification E2.2a; or (B) a sprinkler system complying with Specification E1.5. <p>(b) The following buildings are exempt from the provisions of (a):</p> <ul style="list-style-type: none"> (i) Sporting complexes (including sports halls, gymnasiums, <i>swimming pools</i>, ice and roller rinks, and the like) other than an indoor sports stadium with a total spectator seating for more than 1000. (ii) Churches and other places used solely for religious worship.

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SPECIFICATION **E2.2a** SMOKE DETECTION AND ALARM SYSTEMS

Deemed-to-Satisfy Provisions

1. Scope

This Specification describes the installation and operation of *automatic* smoke detection and alarm systems.

2. Type of system

A *required automatic* smoke detection and alarm system must comply with the following:

(a) **Class 2 and 3 buildings and Class 4 part:**

- (i) Subject to (ii), a Class 2 and 3 building and Class 4 part must be provided with-
 - (A) a smoke alarm system complying with Clause 3; or
 - (B) a smoke detection system complying with Clause 4, or
 - (C) a combination of a smoke alarm system within *sole-occupancy units* and a smoke detection system in areas not within the *sole-occupancy units*.
- (ii) A Class 3 building must be provided with a smoke detection system complying with Clause 4 if it-
 - (A) has a Class 3 part located more than 2 *storeys* above ground level; or
 - (B) accommodates more than 20 residents and is used as a residential part of a *school* or accommodation for the aged, children or people with disabilities.

(b) **Class 5, 6, 7, 8 and 9b buildings:** A smoke detection system complying with Clause 4.

(c) **Class 9a building:**

- (i) Where 6 or less bed patients are accommodated-
 - (A) a smoke alarm system complying with Clause 3; or

Deemed-to-Satisfy Provisions

- (B) a smoke detection system complying with Clause 4.
- (ii) Where more than 6 bed patients are accommodated, a smoke detection system complying with Clause 4.

3. Smoke alarm system

- (a) A smoke alarm system must-
 - (i) consist of smoke alarms complying with AS 3786; and
 - (ii) be powered from the consumers mains source.
- (b) In kitchens and other areas where the use of the area is likely to result in smoke alarms causing spurious signals, heat alarms may be installed in lieu of smoke alarms, except where the kitchen or other area is sprinklered, the heat alarms need not be provided.
- (c) In a Class 2 or 3 building or Class 4 part, smoke alarms must be installed-
 - (i) within each *sole-occupancy unit*, located on or near the ceiling in any *storey*-
 - (A) containing bedrooms-
 - (aa) between each part of the *sole-occupancy unit* containing bedrooms and the remainder of the *sole-occupancy unit*, and
 - (bb) where bedrooms are served by a hallway, in that hallway; and
 - (B) not containing any bedrooms, in egress paths; and
 - (ii) in a building not protected with a sprinkler system, in *public corridors* and other internal public spaces, located in accordance with the requirements for smoke detectors in AS 1670 and connected to activate a building occupant warning system in accordance with Clause 6; and
- (d) In a Class 9a building, smoke alarms must be installed in every room, *public corridor* and other internal public spaces and-
 - (i) be located in accordance with the requirements for smoke detectors in AS 1670 and interconnected to provide a common alarm; and

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- (ii) have manual call points installed in *evacuation routes* so that no point on a floor is more than 30 m from a manual call point.

4. Smoke detection system

- (a) A smoke detection system must-
 - (i) subject to (c) and (d), comply with AS 1670 except for the provisions of-
 - (A) Clause 4.3(f); and
 - (B) Clause 9.4(d) "Logbooks"; and
 - (C) Clause 9.5 "Maintenance"; and
 - (ii) activate a building occupant warning system in accordance with Clause 6.
- (b) In kitchens and other areas where the use of the area is likely to result in smoke detectors causing spurious signals, heat detectors may be installed in lieu of smoke detectors, except where the kitchen or other area is sprinklered, the heat detectors need not be provided.
- (c) In a Class 2 or 3 building or Class 4 part of a building smoke detectors must be installed-
 - (i) within each *sole-occupancy unit*, located in accordance with the requirements for smoke alarms in Clause 3(c)(i); and
 - (ii) in a building not protected with a sprinkler system, in *public corridors* and other internal public spaces.
- (d) In a Class 9a building-
 - (i) (A) photo-electric type smoke detectors must be installed in *patient care areas* and alternate photo-electric and ionisation detectors must be installed in paths of travel to *exits* from *patient-care areas*; and
 - (B) in areas other than *patient care areas* and paths of travel to *exits* from *patient care areas*, type "A" rate of rise heat detectors may be installed in lieu of smoke detectors, except that the heat detectors need not be installed if the area is sprinklered; and

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- (ii) manual call points must be installed in *evacuation routes* so that no point on a floor is more than 30 m from a manual call point.

5. Smoke detection for smoke control systems

- (a) Smoke detectors *required* to activate air pressurisation systems for fire-isolated *exits* and zone smoke control systems must-
 - (i) be installed in accordance with AS 1668.1; and
 - (ii) have additional smoke detectors installed adjacent to each bank of lift landing doors set back horizontally from the door openings by a distance of not more than 3 m.
- (b) Smoke detectors *required* to activate-
 - (i) *automatic* shutdown of air-handling systems in accordance with Table E2.2b; or
 - (ii) a smoke exhaust system in accordance with Specification E2.2b; or
 - (iii) *smoke-and-heat vents* in accordance with Specification E2.2c,
 must-
 - (iv) be spaced-
 - (A) not more than 20 m apart and not more than 10 m from any wall, bulkhead or smoke curtain; and
 - (B) in enclosed malls and walkways in a Class 6 building not more than 15 m apart and not more than 7.5 m from any wall, bulkhead or curtain; and
 - (v) have a sensitivity-
 - (A) in accordance with AS 1668.1 in areas other than a multi-*storey* walkway and mall in a Class 6 building; and
 - (B) not exceeding 0.5% smoke obscuration per metre with compensation for external airborne contamination as necessary, in a multi-*storey* walkway and mall in a Class 6 building.

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- (c) Smoke detectors provided to activate a smoke control system must-
 - (i) (A) form part of a building fire or smoke detection system complying with AS 1670; or
 - (B) be a separate dedicated system incorporating control and indicating equipment with alarm verification facility and complying with AS 1603.4; and
 - (ii) activate a building occupant warning system complying with Clause 6, except that smoke detectors provided solely to initiate *automatic* shutdown of air-handling systems in accordance with (b)(i) need not activate a building occupant warning system.

6. Building occupant warning system

A building occupant warning system must comply with Clause 8.7 of AS 1670 to sound through all occupied areas except-

- (a) in a Class 2 and 3 building or Class 4 part provided with a smoke alarm system in accordance with Clause 3(c)(ii)-
 - (i) the sound pressure level need not be measured within a *sole-occupancy unit* if a level of not less than 85 dB(A) is provided at the door providing access to the *sole-occupancy unit*; and
 - (ii) the inbuilt sounders of the smoke alarms may be used to wholly or partially meet the requirements; and
- (b) in a Class 2 and 3 building or Class 4 part provided with a smoke detection system in accordance with Clause 4(c), the sound pressure level from a warning system need not be measured within a *sole-occupancy unit* if a level of not less than 100 dB(A) is provided at the door providing access to the *sole-occupancy unit*; and
- (c) in a Class 3 building used as a *residential aged care building*, the system-
 - (i) must be arranged to provide a warning for staff; and
 - (ii) in occupant areas, the alarm may be adjusted in volume and content to minimise trauma consistent with the type and condition of occupants; and
- (d) in a Class 9a building in a *patient care area*, the system-
 - (i) must be arranged to provide a warning for staff ; and

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- (ii) in a *ward area*, the alarm may be adjusted in volume and content to minimise trauma consistent with the type and condition of the patients.

7. System monitoring

The following installations must be permanently connected to a fire station or other approved monitoring service with a direct data link to a fire station:

- (a) A smoke detection system in a Class 3 building provided in accordance with Clause 2(a)(ii).
- (b) A smoke detection system in a Class 9a building, if the building accommodates more than 20 patients.
- (c) A smoke detection system in accordance with Clause 5 provided to activate-
 - (i) a smoke exhaust system in accordance with Specification E2.2b; or
 - (ii) smoke-and-heat vents in accordance with Specification E2.2c.
- (d) A fire detection system installed in accordance with C2.3(a)(i)(A).

NSW Spec E2.2a 7(d)

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SPECIFICATION **E2.2b** SMOKE EXHAUST SYSTEMS

Deemed-to-Satisfy Provisions

1. Scope

This Specification describes the requirements for mechanical smoke exhaust systems.

2. Smoke exhaust capacity

- (a) Smoke exhaust fans must have a sufficient capacity to contain the smoke layer-
 - (i) within a smoke reservoir formed in accordance with Clause 4 and not less than 2 m above the highest floor level; and
 - (ii) above the top of any openings interconnecting different smoke reservoirs.
- (b) Exhaust rates must be determined in accordance with Figure 2.1, with the height measurement taken from the lowest floor level to the underside of the smoke layer.

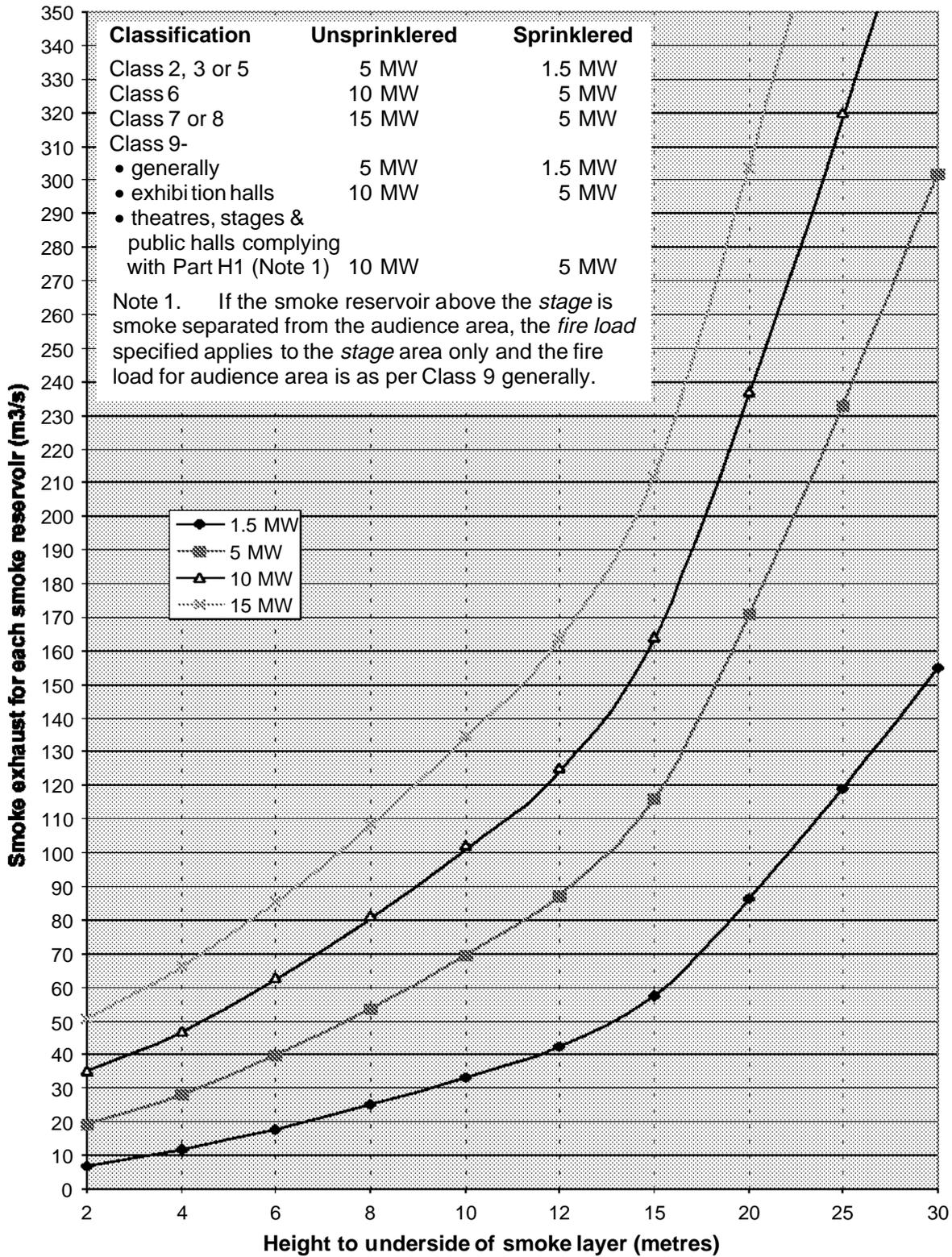
3. Smoke exhaust fans

Each smoke exhaust fan, complete with its drive, flexible connections, control gear and wiring must-

- (a) be constructed and installed so that it is capable of continuous operation (exhausting the *required* volumetric flow rate at the installed system resistance) at a temperature of 200^o C for a period of not less than 1 hour; and
- (b) in a building not fitted with a sprinkler system, be capable of continuous operation at a temperature of 300^o C for a period of not less than 30 minutes; and
- (c) be rated to handle the *required* volumetric flow rate at ambient temperature to be capable of exhausting cool smoke during the early stages of a fire and to allow routine testing; and
- (d) have any high temperature overload devices installed, *automatically* overridden during the smoke exhaust operation.

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**Figure 2.1
SMOKE EXHAUST RATE**



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*Deemed-to-Satisfy Provisions***4. Smoke reservoirs**

- (a) A *fire compartment* must be divided at ceiling level into smoke reservoirs formed by smoke baffles/curtains of *non-combustible* and non-shatterable construction.
- (b) The horizontal area of a smoke reservoir must not exceed 2000 m² and in enclosed walkways and malls of a Class 6 building must not exceed 60 m in length.
- (c) Smoke reservoirs must be of sufficient depth to contain the smoke layer and must not be less than 500 mm below an imperforate ceiling or roof.
- (d) (i) Within a *multi-storey fire compartment*, a *non-combustible* bulkhead or smoke baffle/curtain must be provided around the underside of each opening into a building void to minimise the spread of smoke to other *storeys*.
- (ii) The depth of the bulkhead or smoke baffle must be not less than the depth of the smoke reservoir provided under (c) plus an additional 400 mm.

5. Smoke exhaust fan and vent location

Smoke exhaust fans and vents must be located-

- (a) such that each smoke reservoir is served by one or more fans with the maximum exhaust rate at any one point limited to avoid extracting air from below the smoke layer; and
- (b) to prevent the formation of stagnant regions resulting in excessive cooling and downward mixing of smoke; and
- (c) at natural collection points for the hot smoky gases within each smoke reservoir having due regard to the ceiling geometry and its effect on the migratory path of the smoke; and
- (d) away from the intersection of walkways or malls; and
- (e) to ensure that any voids containing escalators and/or stairs commonly used by the public are not used as a smoke exhaust path; and
- (f) to discharge directly to outdoor with a velocity of not less than 5 m/s, at a suitable point not less than 6 m from any air intake point or *exit*.

*Deemed-to-Satisfy Provisions***6. Make-up air**

- (a) Low level make-up air must be provided either *automatically* or via permanent ventilation openings to replace the air exhausted so as to minimise-
 - (i) any disturbance of the smoke layer due to turbulence created by the incoming air; and
 - (ii) the risk of smoke migration to areas remote from the fire due to the effect of make-up air on the air balance of the total system.
- (b) The velocity of make-up air through doorways must not exceed 2.5 m/s.
- (c) Within a multi-storey fire compartment, make-up air must be provided across each vertical opening from a building void to the fire-affected storey at an average velocity of 1 m/s so as to minimise the spread of smoke from the fire-affected storey to other storeys.

7. Smoke exhaust system control

- (a) Each smoke exhaust fan must be activated sequentially by smoke detectors complying with Specification E2.2a and arranged in zones to match the smoke reservoir served by the fan(s).
- (b) Subject to (c) and (d), an air handling system (other than individual room units less than 1000 l/s and miscellaneous exhaust air systems installed in accordance with Section 7 of AS 1668.1) which does not form part of the smoke hazard management system must be *automatically* shut down on the activation of the smoke exhaust system.
- (c) In a single storey fire compartment, air handling systems in all non fire-affected zones may operate on 100% outdoor air to provide make-up air to the fire-affected zone.
- (d) Within a multi-storey fire compartment, air handling systems in all non fire-affected zones and storeys must operate at 100% outdoor air to provide make-up air to the fire-affected storey via building voids connecting storeys.
- (e) Manual override control and indication together with operating instructions for use by emergency personnel must be provided adjacent to the fire indicator panel in accordance with the requirements of Clauses 4.17 and 4.18 of AS 1668.1.

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- (f) Manual control for the smoke exhaust system must also be provided at a location normally used by the *stage* manager in a theatre.
- (g) Power supply wiring to exhaust fans together with detection, control, and indication circuits (and where necessary to *automatic* make-up air supply arrangements) must comply with AS1668.1.

8. Smoke detection

A smoke detection system must be installed in accordance with Specification E2.2a to activate the smoke exhaust system.

SPECIFICATION **E2.2c** SMOKE-AND-HEAT VENTS

Deemed-to-Satisfy Provisions

1. Adoption of AS 2665

Automatic smoke-and-heat vents must be installed as a system complying with AS 2665 except that-

- (a) (i) the horizontal area of the smoke reservoirs formed by the draught curtains must not exceed 1500 m²; and
- (ii) in addition, enclosed malls and walkways in a Class 6 building must be separated into smoke reservoirs not exceeding 60 metres in length with sufficient depth to contain the smoke layer; and
- (b) all *smoke-and-heat vents* within the same smoke reservoir must open at the same time and must fail-safe open; and
- (c) permanently open vents may form part of the smoke/heat venting system provided that the aerodynamic area of the system complies with AS 2665 and the vents comply with all other relevant construction and performance requirements applicable to the *automatic smoke-and-heat vents*.

2. Controls

Where a *smoke-and-heat vent* system is installed to comply with Table E2.2b, the following must apply:

- (a) In addition to thermally released link operation, *smoke-and-heat vents* must also be initiated by smoke detectors complying with Specification E2.2a and arranged in zones to match the smoke reservoirs..
- (b) Manual override controls and indication, with operating instructions for use by emergency personnel, must be provided adjacent to the fire indicator panel.
- (c) Manual control must also be provided at a location normally used by the *stage* manager in a theatre.

3. Smoke detection

A smoke detection system where required by Clause 2(a) must be installed in accordance with of Specification E2.2a to activate the *smoke-and-heat vents*.

PART E3 LIFT INSTALLATIONS

OBJECTIVE

- EO3** The objective of this Part is to-
- (a) facilitate the safe movement of occupants; and
 - (b) facilitate access for emergency services personnel to carry out emergency procedures and assist in the evacuation of occupants.

FUNCTIONAL STATEMENTS

- EF3.1** Where a passenger lift is provided, it is to facilitate safe and easy-
- (a) movement for occupants with disabilities; and
 - (b) evacuation of occupants, who due to illness or injury need stretcher assistance.

Application:

EF3.1(b) only applies to a building with an *effective height* of more than 12 m.

- EF3.2** A building is to be provided with one or more passenger lifts to facilitate-
- (a) the safe access for emergency services personnel; and
 - (b) safe and easy evacuation of occupants who due to illness, injury or disability cannot use stairways in the event of an emergency.

Application:

EF3.2 only applies to-

- (a) a building with an *effective height* of more than 25 m; and
- (b) a Class 9a building in which *patient care areas* are located above a level with direct access to a road or *open space*.

EF3.3 A building having a passenger lift is to be provided with measures to alert occupants when use of the lift is inappropriate.

PERFORMANCE REQUIREMENTS

EP3.1 Stretcher facilities must be provided-

- (a) in at least one emergency lift *required* by EP3.2; or
- (b) where an emergency lift is not *required* and a passenger lift is provided, in at least one lift, to serve each floor in the building served by the passenger lift.

Application:

EP3.1 (b) only applies to a building with an *effective height* of more than 12 m.

EP3.2 One or more passenger lifts fitted as emergency lifts to serve each floor served by the lifts in a building must be installed to facilitate the activities of the *fire brigade* and other emergency services personnel.

Application:

EP3.2 only applies to-

- (a) a building with an *effective height* of more than 25 m; and
- (b) a Class 9a building in which *patient care areas* are located above a level with direct access to a road or *open space*.

EP3.3 Signs or other means must be provided to warn occupants against the use of a lift during a fire.

EP3.4 When a passenger lift is provided in a building *required* to be *accessible*, it must be suitable for use by occupants with disabilities.

PART E3 LIFT INSTALLATIONS

Deemed-to-Satisfy Provisions

E3.0 Deemed-to-Satisfy Provisions

Performance Requirements EP3.1 to EP3.4 are satisfied by complying with E3.1 to E3.6.

E3.1 * * * * *

This clause has deliberately been left blank.

E3.2 Stretcher facility in lifts

- (a) A stretcher facility in accordance with (b) must be provided-
 - (i) in at least one emergency lift *required* by E3.4; or
 - (ii) where an emergency lift is not *required*, if passenger lifts are installed in any building with an *effective height* of more than 12 m, in at least one of those lifts to serve each floor served by the lifts.
- (b) A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600 mm wide x 2000 mm long x 1400 mm high above the floor level.

E3.3 Warning against use of lifts in fire

A warning sign must-

- (a) be displayed where it can be readily seen-
 - (i) near every call button for a passenger lift or group of lifts throughout a building; except
 - (ii) a small lift such as a dumb-waiter or the like that is for the transport of goods only; and
- (b) comply with the details and dimensions of Figure E3.3 and consist of-
 - (i) incised, inlaid or embossed letters on a metal, wood, plastic or similar plate securely and permanently attached to the wall; or
 - (ii) letters incised or inlaid directly into the surface of the material forming the wall.

Deemed-to-Satisfy Provisions

**E3.4 Emergency lifts**

- (a) At least one emergency lift complying with (e) must be installed in-
- (i) a building which has an *effective height* of more than 25 m; and
 - (ii) a Class 9a building in which *patient care areas* are located above a level with direct egress to a road or *open space*.
- (b) An emergency lift may be combined with a passenger lift and must serve those *storeys* served by the passenger lift so that all *storeys* of the building served by passenger lifts are served by at least one emergency lift.
- (c) Where two or more passenger lifts are installed and serve the same *storeys*, excluding a lift that is within an *atrium* and not contained wholly within a *shaft*-
- (i) at least two emergency lifts must be provided to serve those *storeys*; and
 - (ii) if located within different *shafts*, at least one emergency lift must be provided in each *shaft*.
- (d) An emergency lift must be contained within a *fire-resisting shaft*.

Deemed-to-Satisfy Provisions

- (e) An emergency lift must-
- (i) comply with AS 1735.2; and
 - (ii) in a Class 9a building serving a *patient care area*-
 - (A) have the following minimum dimensions, measured clear of all obstructions, including handrails, etc.

Minimum depth of car	2280 mm
Minimum width of car	1600 mm
Minimum floor to ceiling height	2300 mm
Minimum door height	2100 mm
Minimum door width	1300 mm; and
 - (B) be connected to a standby power supply system where installed; and
 - (iii) have a rating of at least 600 kg if the building has an *effective height* of more than 75 m.

E3.5 Landings

- (a) The provisions of Clause 12.2- "Access" of AS 1735.2 do not apply.
- (b) Access and egress to and from liftwell landings must comply with the deemed-to-satisfy provisions of Section D.

E3.6 Facilities for people with disabilities

Where *required* by D3.3(a), every passenger lift must-

- (a) be provided with a handrail complying with the provisions for a mandatory handrail in AS 1735.12; and
- (b) have minimum internal floor dimensions complying with AS 1735.12; and
- (c) have doors with a minimum clear opening complying with AS 1735.12; and
- (d) be fitted with a series of door opening sensory devices which will detect a 75 mm diameter rod across the door opening between 50 mm and 1550 mm above floor level; and
- (e) have a set of buttons for operating the lift located at heights above floor level complying AS 1735.12.

PART E4 EMERGENCY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS

OBJECTIVE

- EO4** The objective of this Part is, in an emergency, to safeguard occupants from injury by-
- (a) having adequate lighting; and
 - (b) having adequate identification of *exits* and paths of travel to *exits*; and
 - (c) being made aware of the emergency.

FUNCTIONAL STATEMENT

- EF4.1** A building is to be provided with-
- (a) adequate lighting upon failure of normal artificial lighting during an emergency; and
 - (b) adequate means-
 - (i) of warning occupants to evacuate; and
 - (ii) to manage the evacuation process; and
 - (iii) to identify *exits* and paths of travel to an *exit*.

PERFORMANCE REQUIREMENTS

- EP4.1** A level of illumination for safe evacuation in an emergency must be provided to the degree necessary appropriate to-
- (a) the function or use of the building; and
 - (b) the *floor area* of the building; and
 - (c) the distance of travel to an *exit*.
- EP4.2** To facilitate evacuation, suitable signs or other means of identification must, to the degree necessary-
- (a) be provided to identify the location of *exits*; and
 - (b) guide occupants to *exits*; and

- (c) be clearly visible to occupants; and
- (d) operate in the event of a power failure of the main lighting system for sufficient time for occupants to safely evacuate.

EP4.3 To warn occupants of an emergency and assist evacuation of a building, an emergency warning and intercommunication system must be provided, to the degree necessary, appropriate to-

- (a) the *floor area* of the building; and
- (b) the function or use of the building; and
- (c) the height of the building.

PART E4 EMERGENCY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS

Deemed-to-Satisfy Provisions

E4.0 Deemed-to-Satisfy Provisions

Performance Requirements EP4.1 to EP4.3 are satisfied by complying with E4.1 to E4.9.

E4.1 * * * * *

This clause has deliberately been left blank.

E4.2 Emergency lighting requirements

An emergency lighting system must be installed-

- (a) in every *fire-isolated stairway, fire-isolated ramp or fire-isolated passageway*; and
- (b) in every *storey* of a Class 5, 6, 7, 8 or 9 building where the *storey* has a *floor area* more than 300 m²-
 - (i) in every passageway, corridor, hallway, or the like, that is part of the path of travel to an *exit*; and
 - (ii) in any room having a *floor area* more than 100 m² that does not open to a corridor or space that has emergency lighting or to a road or *open space*; and
 - (iii) in any room having a *floor area* more than 300 m²; and
- (c) in every passageway, corridor, hallway, or the like, having a length of more than 6 m from the entrance doorway of any *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part to the nearest doorway opening directly to-
 - (i) a *fire-isolated stairway, fire-isolated ramp or fire-isolated passageway*; or
 - (ii) an external stairway serving instead of a *fire-isolated stairway* under D1.8; or
 - (iii) an external balcony leading to a *fire-isolated stairway, fire-isolated ramp or fire-isolated passageway*; or
 - (iv) a road or *open space*; and
- (d) in every *required non fire-isolated stairway*; and
- (e) in a *sole-occupancy unit* in a Class 5, 6 or 9 building if-

Deemed-to-Satisfy Provisions

- (i) the *floor area* of the *unit* is more than 300 m²; and
 - (ii) an *exit* from the *unit* does not open to a road or *open space* or to an external stairway, passageway, balcony or ramp, leading directly to a road or *open space*; and
- (f) in every room or space to which there is public access in every *storey* in a Class 6 or 9b building if-
- (i) the *floor area* in that *storey* is more than 300 m²; or
 - (ii) any point on the floor of that *storey* is more than 20 m from the nearest doorway opening directly to a stairway, ramp, passageway, road or *open space*
 - (iii) egress from that *storey* involves a vertical rise within the building of more than 1.5 m, or any vertical rise if the *storey* concerned does not admit sufficient light; or
 - (iv) the *storey* provides a path of travel from any other *storey required* by (i), (ii) or (iii) to have emergency lighting; and
- (g) in a Class 9a building-
- (i) in every passageway, corridor, hallway, or the like, serving a *treatment area* or a *ward area*; and
 - (ii) in a *patient care area* having a *floor area* of more than 120 m²; and
- (h) in every *required* fire control centre.

SA E4.2(h),(i)

E4.3 Measurement of distance

Distances, other than vertical rise, must be measured along the shortest path of travel whether by straight lines, curves or a combination of both.

E4.4 Design and operation of emergency lighting

- (a) Every emergency lighting system must-
- (i) be *automatic* in operation; and
 - (ii) provide sufficient illumination without undue delay for safe evacuation of all areas of the building where it is *required*; and
 - (iii) if it is a central system, be suitably protected from damage by fire.
- (b) Emergency lighting must comply with AS 2293.1.

*Deemed-to-Satisfy Provisions***E4.5 Exit signs**

An *exit* sign must be clearly visible to persons approaching the *exit*, and must be installed on, above or adjacent to each-

- (a) door providing direct egress from a *storey* to-
 - (i) an enclosed stairway, passageway or ramp serving as a *required exit*; and
 - (ii) an external stairway, passageway or ramp serving as a *required exit*; and
 - (iii) an external access balcony leading to a *required exit*; and
- (b) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or *open space*; and
- (c) *horizontal exit*; and
- (d) door serving as, or forming part of, a *required exit* in a *storey* *required* to be provided with emergency lighting in accordance with E4.2.

NSW E4.6

E4.6 Direction signs

If an *exit* is not readily apparent to persons occupying or visiting the building then *exit* signs with directional arrows must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a *required exit*.

E4.7 Class 2 and 3 buildings and Class 4 parts: Exemptions

E4.5 does not apply to-

- (a) a Class 2 building in which every door referred to is clearly and legibly labelled on the side remote from the *exit* or balcony-
 - (i) with the word "EXIT" in capital letters 25 mm high in a colour contrasting with that of the background; or
 - (ii) by some other suitable method; and
- (b) an entrance door of a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part.

*Deemed-to-Satisfy Provisions***E4.8 Design and operation of exit signs**

- (a) Every *required exit sign* must-
- (i) be clear and legible and have letters and symbols of adequate size; and
 - (ii) be illuminated at a level sufficient for it to be clearly visible at all times when the building is occupied by any person having the right of legal entry to the building; and
 - (iii) be installed so that if the normal power supply fails, emergency illumination is provided to the sign; and
 - (iv) if illuminated by an emergency lighting system incorporating wiring and a power source, comply with E4.4.
- (b) *Exit signs* must comply with AS 2293.1.

E4.9 Emergency warning and intercommunication systems

An emergency warning and intercommunication system complying where applicable with AS 2220 Parts 1 and 2 must be installed-

- (a) in a building with an *effective height* of more than 25 m; and
- (b) in a Class 3 building having a *rise in storeys* of more than 2 and used as-
 - (i) the residential part of a *school*; or
 - (ii) accommodation for the aged, children or people with disabilities; and
- (c) in a Class 3 building used as a *residential aged care building*, except that the system-
 - (i) must be arranged to provide a warning for staff; and
 - (ii) in occupant areas, the alarm may be adjusted in volume and content to minimise trauma, consistent with the type and condition of occupants; and

Deemed-to-Satisfy Provisions

- (d) in a Class 9a building having a *floor area* of more than 1000 m² or a *rise in storeys* of more than 2, except that the system-
 - (i) must be arranged to provide a warning for staff; and
 - (ii) in *ward areas*, the alarm may be adjusted in volume and content to minimise trauma, consistent with the type and condition of patients; and
- (e) in a Class 9b building-
 - (i) used as a *school* and having a *rise in storeys* of more than 3; or
 - (ii) used as a theatre, public hall, or the like, having a *floor area* more than 1000 m² or a *rise in storeys* of more than 2.

SECTION **F**

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HEALTH AND AMENITY

- F1 Damp and Weatherproofing
- F2 Sanitary and Other Facilities
- F3 Room Sizes
- F4 Light and Ventilation
- F5 Sound Transmission and Insulation

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PART F1 DAMP AND WEATHERPROOFING

OBJECTIVE

- FO1** The objective of this Part is to-
- (a) safeguard occupants from illness or injury and protect the building from damage caused by-
 - (i) *surface water*; and
 - (ii) external moisture entering a building; and
 - (iii) the accumulation of internal moisture in a building; and
 - (b) protect *other property* from damage caused by redirected *surface water*.

FUNCTIONAL STATEMENTS

- FF1.1** A building including any associated *sitework* is to be constructed in a way that protects people and *other property* from the adverse effects of redirected *surface water*.
- FF1.2** A building is to be constructed to provide resistance to moisture penetrating from the outside including rising from the ground.
- FF1.3** A building is to be constructed to avoid the likelihood of-
- (a) the creation of unhealthy or dangerous conditions; and
 - (b) damage to building elements, caused by dampness or water overflow from bathrooms, laundries and the like.

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PERFORMANCE REQUIREMENTS

FP1.1 *Surface water*, resulting from a storm having an *average recurrence interval* of 10 years and which is collected or concentrated by a building or *sitework*, must be disposed of in a way that avoids the likelihood of damage or nuisance to any *other property*.

FP1.2 *Surface water*, resulting from a storm having an *average recurrence interval* of 5 years must not enter the building.

Limitation:

FP1.2 does not apply to-

- (a) a Class 7 or 8 building where in the particular case there is no necessity for compliance; or
- (b) a garage, tool shed, *sanitary compartment*, or the like, forming part of a building used for other purposes; or
- (c) an *open spectator stand* or *open-deck carpark*.

FP1.3 A drainage system for the disposal of *surface water* must-

- (a) convey *surface water* to an appropriate *outfall*; and
- (b) avoid the entry of water into a building; and
- (c) avoid water damaging the building.

Note:

The BCA does not contain any deemed-to-satisfy provisions for this performance requirement.

FP1.4 A roof and *external wall* (including openings around *windows* and doors) must prevent the penetration of water that could cause-

- (a) unhealthy or dangerous conditions, or loss of amenity for occupants; and
- (b) undue dampness or deterioration of building elements.

	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Limitation: FP1.4 does not apply to-</p> <ul style="list-style-type: none"> (a) a Class 7 or 8 building where in the particular case there is no necessity for compliance; or (b) a garage, tool shed, <i>sanitary compartment</i>, or the like, forming part of a building used for other purposes; or (c) an <i>open spectator stand</i> or <i>open-deck carpark</i>. </div> <p>SA FP1.5 FP1.5 A building element must be protected against deterioration caused by undue dampness or other conditions on the allotment.</p> <p>SA FP1.6 FP1.6 Overflow from a bathroom, laundry facility or the like must be prevented from penetrating to-</p> <ul style="list-style-type: none"> (a) another <i>sole-occupancy unit</i> used for sleeping accommodation; and (b) a public space, in a <i>storey</i> below in the same building. <p>SA FP1.8 FP1.7 To protect the structure of the building and to maintain the amenity of the occupants, water must be prevented from penetrating-</p> <ul style="list-style-type: none"> (a) behind fittings and linings; and (b) into concealed spaces, of <i>sanitary compartments</i>, bathrooms, laundries and the like.
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PART F1 DAMP AND WEATHERPROOFING

Deemed-to-Satisfy Provisions

ACT F1.0

F1.0 Deemed-to-Satisfy Provisions

- (a) Performance Requirements FP1.1 to FP1.3 must be complied with.

There are no deemed-to-satisfy provisions for these Performance Requirements.

SA F1.0(b)

- (b) Performance Requirements FP1.4 to FP1.7 are satisfied by complying with F1.5 to F1.12.

ACT F1.1

F1.1 * * * * *

This clause has deliberately been left blank.

F1.2 * * * * *

This clause has deliberately been left blank.

F1.3 * * * * *

This clause has deliberately been left blank.

F1.4 * * * * *

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F1.5 Roof coverings

A roof must be covered with-

- (a) concrete roofing tiles complying with AS 2049 and fixed, except in cyclonic areas, in accordance with AS 2050, as appropriate; or
- (b) terracotta roofing tiles complying with AS 2049 and fixed, except in cyclonic areas, in accordance with AS 2050; or
- (c) corrugated cellulose fibre reinforced cement sheeting complying with AS 2908.1 and installed in accordance with AS 1639; or

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Deemed-to-Satisfy Provisions

- (d) metal sheet roofing complying with AS 1562.1; or
- (e) plastic sheet roofing designed and installed in accordance with AS/NZ 4256 Parts 1, 2, 3 and 5 and AS 2424; or
- (f) asphalt shingles complying with ASTM D3018-90, Class A.

F1.6 Sarking

Sarking-type materials used for weatherproofing of roofs and walls must comply with AS/NZ 4200 Parts 1 and 2.

F1.7 Water proofing of wet areas in buildings

- (a) The following parts of a building must be impervious to water:
 - (i) In any building - the floor surface or substrate in a shower enclosure, or within 1.5 m measured horizontally from a point vertically below the shower fitting, if there is no enclosure.
 - (ii) In a Class 3, 5, 6, 7, 8 or 9 building - the floor surface or substrate in a bathroom or shower room, slop hopper or sink compartment, laundry or *sanitary compartment* which is used in common by the occupants.
 - (iii) In a Class 2 or 3 building or Class 4 part - the floor of those rooms fitted with a floor waste in accordance with F1.11.
 - (iv) The wall surface or substrate-
 - (A) of a shower enclosure, or if the shower is not enclosed, within 1.5 m and exposed to a shower fitting, to a height of 1.8 m above the floor; and
 - (B) immediately adjacent or behind a bath, trough, basin, sink, or similar fixture, to a height not less than 150 mm above the fixture if it is within 75 mm of the wall.
 - (v) The junction between the floor and wall if the wall and floor are *required* to be impervious to water.
 - (vi) The junction between the wall and fixture if the wall is *required* to be impervious to water.
- (b) Water proofing of wet areas in a building must comply with the relevant parts of AS 3740.

SA F1.7

Tas F1.7(c)-(e)

Deemed-to-Satisfy Provisions

F1.8 * * * * *

This clause has deliberately been left blank.

F1.9 Damp-proofing

- (a) Except for a building covered by (c), moisture from the ground must be prevented from reaching-
 - (i) the lowest floor timbers and the walls above the lowest floor joists; and
 - (ii) the walls above the damp-proof course; and
 - (iii) the underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders.
- SA F1.9(b) (b) Where a damp-proof course is provided, it must consist of-
 - (i) a material that complies with AS/NZS 2904; or
 - (ii) impervious termite shields in accordance with AS 3660.1.
- (c) The following buildings need not comply with (a):
 - (i) A Class 7 or 8 building where in the particular case there is no necessity for compliance.
 - (ii) A garage, tool shed, *sanitary compartment*, or the like, forming part of a building used for other purposes.
 - (iii) an *open spectator stand* or *open-deck carpark*.

SA F1.10

F1.10 Damp-proofing of floors on the ground

If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870, except damp-proofing need not be provided if-

- (a) weatherproofing is not *required*; or
- (b) the floor is the base of a stair, lift or similar *shaft* which is adequately drained by gravitation or mechanical means.

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Deemed-to-Satisfy Provisions

F1.11 Provision of floor wastes

SA F1.11

In a Class 2 or 3 building or Class 4 part, the floor of each bathroom and laundry located at any level above a *sole-occupancy unit* or public space must be graded to permit drainage to a floor waste.

F1.12 Sub-floor ventilation

The lowest floor of a building must-

- (a) if suspended, have an adequately cross-ventilated space between the underside of the floor and the ground surface; or
- (b) have an impervious cover provided over the ground surface beneath the floor; or
- (c) have the floor members suitably treated.

Qld F1.101

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PART F2 SANITARY AND OTHER FACILITIES

OBJECTIVE

Qld FO2
WA FO2

- FO2** The objective of this Part is to-
- (a) safeguard occupants from illness caused by infection; and
 - (b) safeguard occupants from loss of amenity arising from the absence of adequate personal hygiene facilities; and
 - (c) enable occupants to carry out laundering; and
 - (d) provide for facilities to enable food preparation.

FUNCTIONAL STATEMENTS

FF2.1 A building is to be provided with suitable sanitary facilities and space and facilities for personal hygiene.

FF2.2 A building is to be provided with space and facilities for laundering.

Application:

FF2.2 only applies to a Class 2 building or Class 4 part.

FF2.3 A building is to be provided with space and facilities for the preparation and cooking of food.

Application:

FF2.3 only applies to-

- (a) a Class 2 building or Class 4 part; and
- (b) a *health-care building* and *early childhood centre*.

Qld FF2.4
WA FF2.4

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PERFORMANCE REQUIREMENTS

FP2.1 Suitable sanitary facilities for personal hygiene must be provided in a convenient location within or outside the building, to the degree necessary, appropriate to-

- (a) the function or use of the building; and
- (b) the number and gender of the occupants; and
- (c) the disability or other particular needs of the occupants.

FP2.2 Laundering facilities or space for laundering facilities must be provided in a convenient location within or outside the building appropriate to the function or use of the building.

Application:

FP2.2 only applies to a Class 2 building or Class 4 part.

FP2.3 A facility must be provided which includes -

- (a) a means for food rinsing, utensil washing and waste water disposal; and
- (b) a means for cooking food; and
- (c) a space for food preparation.

Application:

FP2.3 only applies to-

- (a) a Class 2 building or Class 4 part; and
- (b) a *health-care building* and *early childhood centre*.

FP2.4 Suitable means must be provided in a building containing wards or bedrooms to facilitate the emptying of sewage or dirty water from containers.

Application:

FP2.4 only applies to a Class 9a building.

Qld FP2.5
WA FP2.5

PART F2 SANITARY AND OTHER FACILITIES

Deemed-to-Satisfy Provisions

F2.0 Deemed-to-Satisfy Provisions

Performance Requirements FP2.1 to FP2.4 are satisfied by complying with F2.1 to F2.8.

F2.1 Facilities in residential buildings

Sanitary and other facilities for Class 2 and 3 buildings and for Class 4 parts of buildings must be provided in accordance with Table F2.1.

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**Table F2.1
PROVISION OF SANITARY AND OTHER FACILITIES IN RESIDENTIAL BUILDINGS**

Class of building	Minimum facilities required
Class 2	<p>Within each <i>sole-occupancy unit</i>-</p> <ul style="list-style-type: none"> (a) a kitchen sink and facilities for the preparation and cooking of food; and (b) a bath or shower; and (c) a closet pan and washbasin. <p>Laundry facilities, either-</p> <ul style="list-style-type: none"> (a) in each <i>sole-occupancy unit</i>- <ul style="list-style-type: none"> (i) clothes washing facilities, comprising at least one washtub and space for a washing machine; and (ii) clothes drying facilities comprising- <ul style="list-style-type: none"> (A) clothesline or hoist with not less than 7.5 m of line; or (B) space for one heat-operated drying cabinet or appliance in the same room as the clothes washing facilities; or (b) a separate laundry for each 4 <i>sole-occupancy units</i>, or part- <ul style="list-style-type: none"> (i) clothes washing facilities comprising at least one washtub and one washing machine; and (ii) clothes drying facilities comprising- <ul style="list-style-type: none"> (A) clothes line or hoist with not less than 7.5m of line per <i>sole-occupancy unit</i>; or (B) one heat-operated drying cabinet or appliance for each 4 <i>sole-occupancy units</i>, or part.

Continued

Deemed-to-Satisfy Provisions

Table F2.1 continued	
Class of building	Minimum facilities required
Class 2 continued	Facilities for employees- If the building contains more than 10 <i>sole-occupancy units</i> , or a group of Class 2 buildings on the one allotment contains, in total, more than 10 <i>sole-occupancy units</i> - a closet pan and washbasin in a compartment or room at or near ground level and accessible to employees without entering a <i>sole-occupancy unit</i> .
Class 3	Facilities for residents- For each building or group of buildings- (a) a bath or shower; and (b) a closet pan and washbasin, for each 10 residents for whom private facilities are not provided, except that- (c) if one urinal is provided for each 25 males up to 50 and one additional urinal for each additional 50 males or parts thereof, one closet pan for each 12 males may be provided. Facilities for employees - see Clause F2.3. Note: These facilities need not be situated within the building.
Class 4	For each <i>sole-occupancy unit</i> - (a) a kitchen sink and facilities for the preparation and cooking of food; and (b) a bath or shower; and (c) a closet pan and washbasin; and (d) clothes washing facilities, comprising a washtub and space in the same room for a washing machine or wash copper; and (e) a clothes line or hoist, or space for a heat-operated drying cabinet or similar appliance for the exclusive use of the occupants.

Vic Table F2.1
Class 3

Amdt 0

F2.2 Calculation of number of occupants and fixtures

- (a) The number of persons accommodated must be calculated according to D1.13 if it cannot be more accurately determined by other means.
- (b) Unless the premises are used predominantly by one sex, sanitary facilities must be provided on the basis of equal numbers of males and females.

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- (c) In calculating the number of sanitary facilities to be provided under F2.1 and F2.3, a unisex facility *required* for people with disabilities may be counted once for each sex.
- (d) For the purposes of this Part, a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary towels.

F2.3 Facilities in Class 3 to 9 buildings

SA F2.3(a)

- (a) Sanitary facilities must be provided for Class 3, 5, 6, 7, 8 and 9 buildings in accordance with Table F2.3.
- (b) A *health-care building* must be provided with-
 - (i) one kitchen or other adequate facility for the preparation and cooking or reheating of food including a kitchen sink and washbasin; and
 - (ii) laundry facilities for the cleansing and drying of linen and clothing or adequate facilities for holding and dispatch or treatment of soiled linen and clothing, sanitary towels and the like and the receipt and storage of clean linen.
- (c) An *early childhood centre* must be provided with-
 - (i) one kitchen with facilities for preparation of and cooking food for infants including a kitchen sink and space for a refrigerator; and
 - (ii) if the centre accommodates children younger than 2 years old, a laundry facility comprising a washtub and space in the same room for a washing machine.

Amdt 0

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SA Table F2.3

Table F2.3 SANITARY FACILITIES IN CLASS 3, 5, 6, 7, 8 AND 9 BUILDINGS										
Class of Building	User	Max Number Served by-								
		Closet Fixture(s)			Urinal(s)			Washbasin(s)		
		1	2	Each Extra	1	2	Each Extra	1	2	Each Extra
3,5,6 and 9 other than schools	Employees									
	Males	20	40	20	25	50	50	30	60	30
	Females	15	30	15				30	60	30
7 and 8	Employees									
	Males	20	40	20	25	50	50	20	40	20
	Females	15	30	15				20	40	20
6- Department stores, shopping centres	Patrons									
	Males	1200	2400	1200	600	1200	1200	600	1200	1200
	Females	300	600	1200				600	1200	1200
6- Restaurants cafes, bars	Patrons									
	Males	100	300	200	50	100	*50	50	200	200
	Females	25	50	**50				50	150	200
<p>* Where the number of male patrons exceeds 250, not less than 5 urinals must be provided plus one additional urinal for every additional 100 males in excess of 250.</p> <p>** Where the number of female patrons exceeds 250, not less than 6 closet fixtures must be provided plus one additional closet fixture for every 100 females in excess of 250.</p>										
9a- Health-care buildings	Patients-									
	Males	-	16	8				8	16	8
	Females	-	16	8				8	16	8
	Other facilities	(i) One shower for each 8, or part, patients or inmates. (ii) One island-type plunge bath in each storey containing a ward area.								
9b-Schools	Employees-									
	Males	20	40	20	20	45	30	30	60	30
	Females	5	20	15				30	60	30
	Students-									
Males	30	70	70	30	70	35	20	40	40	
Females	10	20	20				20	40	40	

Continued

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Deemed-to-Satisfy Provisions

Table F2.3 continued											
Class of Building	User	Max Number Served by-									
		Closet Fixture(s)			Urinal(s)			Washbasin(s)			
		1	2	Each Extra	1	2	Each Extra	1	2	Each Extra	
9b- <i>Early Childhood centres</i>	Children-	-	30	15				-	30	15	
	Other facilities	(a) One bath or shower-bath must be provided. (b) If the centre accommodates children under 2 years of age a bench type baby bath must be provided. Note: Closet fixtures for use by children must be- (i) junior pans; and (ii) wash basins with a rim height not exceeding 600 mm.									
9b- Sporting venues, theatres, cinemas, art galleries or the like	Participants										
	Males	20	40	20	10	20	10	10	20	10	
	Females	10	20	10				10	20	10	
	Other facilities	One shower for each 10, or part, participants.									
	Spectators or patrons										
	Males	250	500	500	100	200	100	150	300	150	
	Females	75	150	75				150	300	150	
9b- Churches, chapels or the like	Patrons										
	Males	300	800	500	200	400	200	250	500	250	
	Females	150	300	150				250	500	250	
9b- Public halls, function rooms, or the like	Patrons										
	Males	100	300	200	50	100	*50	50	200	200	
	Females	25	50	**50				50	150	200	
* Where the number of male patrons exceeds 250, not less than 5 urinals must be provided plus one additional urinal for every additional 100 males in excess of 250. ** Where the number of female patrons exceeds 250, not less than 6 closet fixtures must be provided plus one additional closet fixture for every 100 females in excess of 250.											
Continued											

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Deemed-to-Satisfy Provisions

Table F2.3 continued

Notes:

1. Employees - a reference to employees includes owners and managers using the building.
2. Urinals - a urinal need not be provided if the number of males employed is less than 10.
3. Unisex facility - Instead of separate facilities for each sex, if not more than 10 persons are employed, a unisex facility may be provided.
4. Combined facilities - if the majority of employees are of one sex, not more than 2 employees of the other sex may share toilet facilities if -
 - (a) facilities for females include adequate means for the disposal of sanitary towels; and
 - (b) the facilities are separated by means of walls, partitions and doors to afford privacy.
5. Use of public facilities - sanitary facilities for employees need not be separate from those *required* for public use in a Class 6 or 9b building, other than a *school* or *early childhood centre*.
6. Sanitary facilities for public - sanitary facilities need not be provided for the public in -
 - (a) a Class 6 building used as a department store or shopping centre if the building accommodates less than 600 persons; or
 - (b) a Class 6 building used as a restaurant, cafe, bar if the building accommodates not more than 20 persons; or
 - (c) a Class 9b building used as a public hall, function room or the like if the building accommodates not more than 20 persons; or
 - (d) a Class 9b building used as a sporting venue, theatre, cinema, museum, art gallery or the like if the number of spectators or patrons is not more than 100.
7. For females - adequate means of disposal of sanitary towels must be provided.
8. *Health-care buildings* - in *patient care areas* where each *ward* or bedroom is provided with its own facilities - closet pans, washbasins and showers as set out in Table F2.3 need not be provided.

F2.4 Facilities for people with disabilities

- (a) Sanitary facilities must be provided in accordance with Table F2.4 for-
 - (i) every Class 3, 5, 6, 7, 8 and 9 building that is *required* by the deemed-to-satisfy provisions of Part D3 to be accessible to people with disabilities and may be calculated as part of the number of facilities *required* by Table F2.3; and
 - (ii) a Class 10a building to which the public will have access and which contains sanitary facilities, showers or handbasins etc.
- (b) The construction and layout of all facilities provided in accordance with Table F2.4 must comply with AS 1428.1.

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Deemed-to-Satisfy Provisions

- (c) A unisex facility must be located so that it can be entered without crossing an area reserved for one sex only.

Table F2.4 SANITARY FACILITIES FOR PEOPLE WITH DISABILITIES	
Class of building	Minimum facility for use by people with disabilities
Class 3 - In every <i>sole-occupancy unit</i> to which access for people with disabilities is <i>required</i>	(a) One closet pan and washbasin; and (b) one shower.
Class 3 - In- (i) accommodation areas, other than in <i>sole-occupancy units</i> ; and (ii) other parts of the building, to which access for people with disabilities is <i>required</i> and Class 5, 6, 7, 8 and 9 - to which people with disabilities is <i>required</i>	Where F2.1 and F2.3 <i>require</i> 1 - 100 closet pans plus urinals: one unisex facility. Where F2.1 and F2.3 <i>require</i> 101 - 200 closet pans plus urinals: (a) two unisex facilities; or (b) one unisex facility and one closet pan and washbasin for each sex. Where F2.1 and F2.3 <i>require</i> more than 200 closet pans plus urinals: (a) two unisex facilities or one unisex facility and one closet pan and washbasin for each sex; and (b) one additional unisex facility or one closet pan and washbasin for each sex for each additional 100 facilities normally <i>required</i> . Where F2.1 and F2.3 <i>require</i> 1 or more showers: one shower for each 10 showers or part thereof, but not less than one for use by both sexes. Adequate facilities for the disposal of sanitary towels must be provided.
Class 10a - to which the public will have access	(a) Where toilet facilities are provided - at least one unisex facility. (b) Where shower facilities are provided - at least one shower for use by both sexes.
Note: Where sanitary facilities <i>required</i> by Tables F2.1 and F2.3 are located in an appurtenant Class 10a building, the number of facilities for people with disabilities must be determined as if the Class 10a building was of the same classification as that to which it is appurtenant.	

Amdt 0

*Deemed-to-Satisfy Provisions***F2.5 Construction of sanitary compartments**

Other than in an *early childhood centre*, *sanitary compartments* must have doors and partitions that separate adjacent compartments and extend-

- (a) from floor level to the ceiling in the case of a unisex facility; or
- (b) to a height of not less than 1500 mm above the floor if primary *school* children are the principal users; or
- (c) 1800 mm above the floor in all other cases.

F2.6 Interpretation: Urinals and washbasins

- (a) A urinal may be-
 - (i) an individual stall or wall-hung urinal; or
 - (ii) each 600 mm length of a continuous urinal trough; or
 - (iii) a closet pan used in place of a urinal.
- (b) A washbasin may be-
 - (i) an individual basin; or
 - (ii) a part of a hand washing trough served by a single water tap.

F2.7 Warm water installations

Warm water installations in nursing homes, institutions and *health-care buildings* etc., must be installed in accordance with AS/NZS 3666.1.

F2.8 Slop-hoppers

In a Class 9a building, at least one slop-hopper or other device, other than a water closet pan or urinal, must be provided -

- (a) on any *storey* containing *ward areas* or bedrooms to facilitate emptying of containers of sewage or dirty water; and
- (b) with a flushing apparatus, tap and grating.

Qld F2.5
Vic F2.5
WA F2.5

NSW F2.7

Tas F2.101,F2.102
Vic F2.101

PART F3 ROOM SIZES

OBJECTIVE

ACT FO3

FO3 The objective of this Part is to safeguard occupants from injury or loss of amenity caused by inadequate height of a room or space.

FUNCTIONAL STATEMENT

ACT FF3.2

FF3.1 A building is to be constructed to provide height in a room or space suitable for the intended use.

PERFORMANCE REQUIREMENT

ACT FP3.2

FP3.1 A *habitable room* or space must have sufficient height that does not unduly interfere with its intended function.

Amdt 0

PART **F3** ROOM SIZES*Deemed-to-Satisfy Provisions*

ACT F3.0

F3.0 Deemed-to-Satisfy Provisions

Performance Requirement FP3.1 is satisfied by complying with F3.1.

F3.1 Height of rooms

The ceiling height of a room must be not less than-

- (a) in a Class 2 or 3 building or Class 4 part-
 - (i) a kitchen, laundry, or the like - 2.1 m; and
 - (ii) a corridor, passageway or the like - 2.1 m; and
 - (iii) a *habitable room* excluding a kitchen - 2.4 m; and
- (b) in a Class 5, 6, 7 or 8 building -
 - (i) generally, except as allowed in (ii) and (e) - 2.4 m; and
 - (ii) a corridor, passageway, or the like - 2.1 m; and
- (c) in a Class 9a building-
 - (i) a *patient care area* - 2.4 m; and
 - (ii) an operating theatre or delivery room - 3 m; and
 - (iii) a treatment room, clinic, waiting room, passageway, corridor, or the like - 2.4 m; and
- (d) in a Class 9b building-
 - (i) a *school* classroom or other *assembly building* or part that accommodates not more than 100 persons - 2.4 m; and
 - (ii) a theatre, public hall or other *assembly building* or part that accommodates more than 100 persons - 2.7 m; and
- (e) in any building-
 - (i) a bathroom, shower room, *sanitary compartment*, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like - 2.1 m; and
 - (ii) a commercial kitchen - 2.4 m.

ACT F3.101
Vic F3.101-F3.103

Amdt 0

PART F4 LIGHT AND VENTILATION

OBJECTIVE

- FO4** The objective of this Part is to-
- (a) safeguard occupants from injury, illness or loss of amenity due to-
 - (i) isolation from natural light; and
 - (ii) lack of adequate artificial lighting; and
 - (b) safeguard occupants from illness or loss of amenity due to lack of air freshness.

FUNCTIONAL STATEMENTS

- FF4.1** A space within a building used by occupants is to be provided with openings to admit natural light consistent with its function or use.
- FF4.2** A space within a building used by occupants is to be provided with artificial lighting consistent with its function or use which, when activated in the absence of suitable natural light, will enable safe use and movement.
- FF4.3** A space used by occupants within a building is to be provided with adequate ventilation consistent with its function or use.

PERFORMANCE REQUIREMENTS

- FP4.1** Sufficient openings must be provided and distributed in a building so that natural light, when available, provides a level of *illuminance* appropriate to the function or use of that part of the building.
- FP4.2** Artificial lighting must be installed to provide a level of *illuminance* appropriate to the function or use of the building to enable safe use and movement by occupants.

- FP4.3** A space in a building used by occupants must be provided with means of ventilation with *outdoor air* which will maintain adequate air quality.
- FP4.4** A mechanical air-handling system installed in a building must control-
- (a) the circulation of objectionable odours; and
 - (b) the accumulation of harmful contamination by micro-organisms, pathogens and toxins.
- FP4.5** Contaminated air must be disposed of in a manner which does not unduly create a nuisance or hazard to people in the building or *other property*.

PART F4 LIGHT AND VENTILATION

Deemed-to-Satisfy Provisions

F4.0 Deemed-to-Satisfy Provisions

Performance Requirements FP4.1 to FP4.5 are satisfied by complying with F4.1 to F4.12.

F4.1 Provision of natural light

Natural lighting must be provided in:

- (a) **Class 2 buildings and Class 4 parts** - to all *habitable rooms*.
- (b) **Class 3 buildings** - to all bedrooms and dormitories.
- (c) **Class 9a buildings** - to all rooms used for sleeping purposes.
- (d) **Class 9b buildings** - to all general purpose classrooms in primary or secondary *schools* and all playrooms or the like for the use of children in an *early childhood centre*.

Vic F4.1(d)

F4.2 Methods and extent of natural lighting

- (a) Subject to Clause 3.6 of Specification C1.1, *required* natural lighting must be provided by *windows* that-
 - (i) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 10% of the *floor area* of the room; and
 - (ii) are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like.
- (b) In a Class 2, 3 or 9 building or Class 4 part a *required window* that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must not be less than a horizontal distance from that boundary or wall that is the greater of-
 - (i) generally - 1 m; and
 - (ii) in a *patient care area* or other room used for sleeping purposes in a Class 9a building - 3 m; and

Deemed-to-Satisfy Provisions

- (iii) 50% of the square root of the exterior height of the wall in which the *window* is located, measured in metres from its sill.

F4.3 Natural light borrowed from adjoining room

Natural lighting to a room in a Class 2 building or Class 4 part or in a *sole-occupancy unit* of a Class 3 building, may come through a glazed panel or opening from an adjoining room (including an enclosed verandah) if-

- (a) in a Class 2 or 3 building or Class 4 part, both rooms are within the same *sole-occupancy unit* or the enclosed verandah is on common property; and
- (b) the glazed panel or opening has an area of not less than 10% of the *floor area* of the room to which it provides light; and
- (c) the adjoining room has *windows* with an aggregate light transmitting area of not less than 10% of the combined *floor areas* of both rooms,

and the areas specified in (b) and (c) may be reduced as appropriate if direct natural light is provided from another source.

F4.4 Artificial lighting

- (a) Artificial lighting must be provided -
 - (i) in *required* stairways, passageways, and ramps; and
 - (ii) if natural lighting of a standard equivalent to that *required* by F4.2 is not available, and the periods of occupation or use of the room or space will create undue hazard to occupants seeking egress in an emergency, in-
 - (A) Class 4 parts - to *sanitary compartments*, bathrooms, shower rooms, airlocks and laundries; and
 - (B) Class 2 buildings - to *sanitary compartments*, bathrooms, shower rooms, airlocks, laundries, common stairways and other spaces used in common by the occupants of the building; and

Deemed-to-Satisfy Provisions

- (C) Class 3, 5, 6, 7, 8 and 9 buildings - to all rooms that are frequently occupied and all corridors, lobbies, internal stairways, other circulation spaces and paths of egress.
- (b) The artificial lighting system must comply with the relevant provisions of AS 1680 Parts 1, 2.0, 2.1, 2.2 and 2.3.

F4.5 Ventilation of rooms

A *habitable room*, office, shop, factory, workroom, *sanitary compartment*, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have -

- NSW F4.5(b)
- (a) natural ventilation complying with F4.6; or
- (b) a mechanical ventilation or air-conditioning system complying with AS 1668.2 and AS/NZS 3666.2.

F4.6 Natural ventilation

Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, *windows*, doors or other devices which can be opened-

- (a) with an aggregate opening or openable size not less than 5% of the *floor area* of the room *required* to be ventilated; and
- (b) open to-
- (i) a suitably sized court, or space open to the sky; or
 - (ii) an open verandah, carport, or the like; or
 - (iii) an adjoining room in accordance with F4.7.

F4.7 Ventilation borrowed from adjoining room

Natural ventilation to a room may come through a *window*, opening, ventilating door or other device from an adjoining room (including an enclosed verandah) if both rooms are within the same *sole-occupancy unit* or the enclosed verandah is common property, and-

- (a) in a Class 2 building, a *sole-occupancy unit* of a Class 3 building or Class 4 part of a building-
- (i) the room to be ventilated is not a *sanitary compartment*, and

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- (ii) the *window*, opening, door or other device has a ventilating area of not less than 5% of the *floor area* of the room to be ventilated; and
 - (iii) the adjoining room has a *window*, opening, door or other device with a ventilating area of not less than 5% of the combined *floor areas* of both rooms; and
- (b) in a Class 5, 6, 7, 8 or 9 building-
- (i) the *window*, opening, door or other device has a ventilating area of not less than 10% of the *floor area* of the room to be ventilated, measured not more than 3.6 m above the floor; and
 - (ii) the adjoining room has a *window*, opening, door or other device with a ventilating area of not less than 10% of the combined *floor areas* of both rooms; and
- (c) the ventilating areas specified in (a) and (b) may be reduced as appropriate if direct natural ventilation is provided from another source.

F4.8 Restriction on position of water closets and urinals

A room containing a closet pan or urinal must not open directly into-

- (a) a kitchen or pantry; or
- (b) a public dining room or restaurant; or
- (c) a dormitory in a Class 3 building; or
- (d) a room used for public assembly (which is not an *early childhood centre*, *primary school* or *open spectator stand*); or
- (e) a workplace normally occupied by more than one person.

F4.9 Airlocks

If a room containing a closet pan or urinal is prohibited under F4.8 from opening directly to another room-

- (a) in a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part-
 - (i) access must be by an airlock, hallway or other room; or
 - (ii) the room containing the closet pan or urinal must be provided with mechanical exhaust ventilation; and

Deemed-to-Satisfy Provisions

- (b) in a Class 5, 6, 7, 8 or 9 building (which is not an *early childhood centre, primary school or open spectator stand*)-
- (i) access must be by an airlock, hallway or other room with a *floor area* of not less than 1.1 m² and fitted with *self-closing* doors at all access doorways; or
 - (ii) the room containing the closet pan or urinal must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view.

F4.10 * * * * *

This clause has deliberately been left blank. Its content covering sub-floor ventilation has been relocated to F1.12.

F4.11 Carparks

Every *storey* of a *carpark*, except an *open-deck carpark*, must have-

- (a) a system of ventilation complying with AS 1668.2; or
- (b) an adequate system of permanent natural ventilation.

F4.12 Kitchen local exhaust ventilation

A commercial kitchen must be provided with a kitchen exhaust hood complying with AS 1668 Parts 1 and 2 where-

- (a) any cooking apparatus has-
 - (i) a total maximum electrical power input exceeding 8 kW; or
 - (ii) a total gas power input exceeding 29 MJ/h; or
- (b) the total maximum power input to more than one apparatus exceeds-
 - (i) 0.5 kW electrical power; or
 - (ii) 1.8 MJ gas,
per m² of *floor area* of the room or enclosure.

Tas F4.101

Amdt 0

PART F5 SOUND TRANSMISSION AND INSULATION

OBJECTIVE

FO5 The objective of this Part is to safeguard occupants from illness or loss of amenity as a result of undue sound being transmitted-

- (a) between adjoining *sole-occupancy units*, and
- (b) from common spaces to *sole-occupancy units*.

Application:

FO5 only applies to a Class 2 or 3 building.

Vic FO5 Application

FUNCTIONAL STATEMENT

FF5.1 A building element which separates *sole-occupancy units*, or separates a *sole-occupancy unit* from a common space within the building, is to be constructed to prevent undue sound transmission.

Application:

FF5.1 only applies to a Class 2 or 3 building.

PERFORMANCE REQUIREMENTS

FP5.1 Floors separating *sole-occupancy units* must provide insulation against the transmission of airborne and impact generated sound sufficient to prevent illness or loss of amenity to the occupants.

Application:

FP5.1 only applies to a Class 2 or 3 building.

Amdt 0

FP5.2 Walls separating-

- (a) *sole-occupancy units*, or
 - (b) a *sole-occupancy unit* from a plant room, lift shaft, stairway, public corridor, hallway or the like,
- must provide insulation against the transmission of airborne and impact generated sound sufficient to prevent illness or loss of amenity to the occupants.

Application:

FP5.2 only applies to a Class 2 or 3 building.

FP5.3 The *required* sound insulation of floors or walls must not be compromised by the incorporation or penetration of a pipe or other service element.**Application:**

FP5.3 only applies to a Class 2 or 3 building.

PART F5 SOUND TRANSMISSION AND INSULATION

Deemed-to-Satisfy Provisions

F5.0 Deemed-to-Satisfy Provisions

Performance Requirements FP5.1 and FP5.3 are satisfied by complying with F5.1 to F5.7.

Vic F5.1

F5.1 Application of Part

The deemed-to-satisfy provisions of this Part apply to Class 2 and 3 buildings.

F5.2 Sound Transmission Class: Interpretation

A form of construction *required* to have a certain Sound Transmission Class (STC) must-

- (a) have the *required* value determined under AS 1276; or
- (b) comply with Specification F5.2.

F5.3 Sound insulation of floors between units

A floor separating *sole-occupancy units* must have an STC not less than 45.

F5.4 Sound insulation of walls between units

A wall must have an STC not less than 45 if it separates-

- (a) *sole-occupancy units*; or
- (b) a *sole-occupancy unit* from a plant room, lift *shaft*, stairway, *public corridor*, hallway or the like.

F5.5 Walls between a bathroom, sanitary compartment, laundry or kitchen and a habitable room in adjoining unit

- (a) A wall separating a bathroom, *sanitary compartment*, laundry or kitchen in one *sole-occupancy unit* from a *habitable room* (other than a kitchen) in an adjoining unit must-
 - (i) have an STC of not less than 50; and

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- (ii) provide a satisfactory level of *insulation* against impact sound; and
 - (iii) not incorporate a duct which reduces the STC of the wall to less than 50.
- (b) A wall satisfies (a)(i) and (a)(ii) if it is-
- (i) in accordance with Table F5.5; or
 - (ii) for other than masonry, in 2 or more separate leaves without rigid mechanical connection except at their periphery; or
 - (iii) identical with a prototype that is no less resistant to the transmission of impact sound when tested in accordance with Specification F5.5 than a wall listed in Table F5.5.

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Table F5.5 CONSTRUCTION OF WALLS TO REDUCE IMPACT SOUND
<p>Cavity brickwork-</p> <p>Two leaves 90 mm brick masonry with-</p> <ul style="list-style-type: none"> (i) all joints filled solid with mortar; and (ii) an air space not less than 40 mm between the leaves; and (iii) the leaves connected only by ties in accordance with AS 3700.
<p>Single leaf brickwork-</p> <p>110 mm thick brick masonry with-</p> <ul style="list-style-type: none"> (i) each face rendered 13 mm thick; and (ii) 50 mm x 12 mm thick timber battens at not more than 610 mm centres fixed to each face but not recessed into the render; and (iii) one layer of 12 mm thick softboard nailed to the battens; and (iv) 6 mm thick medium density hardboard adhesive-fixed to the softboard.
<p>Concrete blockwork-</p> <p>190 mm thick concrete block masonry with-</p> <ul style="list-style-type: none"> (i) each face of the blocks fitted with 50 mm x 50 mm timber battens, spaced at not more than 610 mm centres, screw-fixed into resilient plugs with rubber inserts; and (ii) the space between the battens completely filled with mineral or glass wool blanket or batts not less than 50 mm thick; and (iii) the outer face of the battens finished with plasterboard not less than 10 mm thick or other material with a mass per unit area not less than 7.3 kg/m².

*Deemed-to-Satisfy Provisions***F5.6 Soil and waste pipes to be separated**

If a soil or waste pipe, including a pipe that is embedded in or passes through a floor, serves or passes through more than one *sole-occupancy unit*

- (a) the pipe must be separated from the rooms of any *sole-occupancy unit* by construction with an STC not less than:
 - (i) 45 if the adjacent room is a *habitable room* (other than a kitchen); or
 - (ii) 30 if the adjacent room is a kitchen or any other room; and
- (b) a door or panel providing access to the pipe must not open into any *habitable room* (other than a kitchen); and
- (c) an access door or panel in any other part must be firmly fixed so as to overlap the frame or rebate of the frame by not less than 10 mm, be fitted with a sealing gasket along all edges and constructed of:
 - (i) wood, particleboard or blockboard not less than 38 mm thick; or
 - (ii) compressed fibre reinforced cement sheeting not less than 9 mm thick; or
 - (iii) other suitable material with a mass per unit area not less than 24.4 kg/m².

F5.7 Isolation of pumps

A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.

SPECIFICATION **F5.2** STC RATINGS FOR BUILDING ELEMENTS

Deemed-to-Satisfy Provisions

1. Scope

This Specification lists the Sound Transmission Class ratings for some common forms of construction.

2. Construction deemed-to-satisfy

The forms of construction listed in Table 2 are considered to have the STC stated in that Table if installed as follows:

- (a) **Masonry** - Units must be laid with all joints filled solid, including those between the masonry and any adjoining construction.
- (b) **Concrete slabs** - Joints between concrete slabs and any adjoining construction must be filled solid.
- (c) **Plasterboard** -
 - (i) if one layer is *required* under this Specification, it must be screw-fixed to the studs with joints staggered on opposite faces; and
 - (ii) if 2 layers are *required*, the first layer must be fixed according to (i) and the second layer must be fixed to the first layer with nails, screws or adhesive so that the joints do not coincide with those of the first layer; and
 - (iii) joints between sheets or between sheets and any adjoining construction must be taped and filled solid; and
 - (iv) fire-protective grade plasterboard must be the special grade manufactured for use in *fire-resisting construction*.
- (d) **Steel studs and perimeter members** -
 - (i) the section of steel must be not less than 0.6 mm thick; and
 - (ii) studs must be not less than 63 mm in depth unless another depth is listed in the Table; and
 - (iii) studs must be fixed to steel top and bottom plates of sufficient depth to permit secure fixing of the plasterboard; and

Deemed-to-Satisfy Provisions

- (iv) all steel members at the perimeter of the wall must be securely fixed to the adjoining structure and bedded in resilient compound or the joints must be caulked so that there are no voids between the steel members and the wall.

**Table 2
STC RATINGS APPLICABLE TO CONSTRUCTION**

Construction	STC (not less than)
WALLS	
Clay brickwork-	
(a) 230 mm thick in one or more leaves and with a mass per unit area of not less than 290 kg/m ²	45
(b) 110 mm thick rendered 13 mm thick on both sides with a mass per unit area of the unrendered wall being not less than 190 kg/m ²	45
(c) 110 mm thick, of semi-dry-pressed bricks and rendered 13 mm on one side, the mass per unit area of the unrendered wall being not less than 215 kg/m ²	45
(d) 110 mm thick, of extruded brick and rendered 13 mm on one side, the mass per unit area of the unrendered wall being not less than 180 kg/m ²	45
Concrete brickwork- 110 mm thick with a mass per unit area of not less than 195 kg/m ²	45
Concrete blockwork-	
(a) 190 mm thick with a mass per unit area of not less than 215 kg/m ²	45
(b) 140 mm thick, the wall thickness of the blocks being not less than 44 mm and with -	
(i) 50 mm x 50 mm timber battens spaced at not more than 610 mm centres screw-fixed on one face of the blocks into resilient plugs with rubber inserts between battens and the wall;	
(ii) the face of the battens clad with 13 mm thick standard plasterboard; and	
(iii) a mass per unit area of the whole system of not less than 220 kg/m ²	45
Concrete-	
(a) In-situ concrete- 125 mm thick and with a density of not less than 2200 kg/m ³	45
(b) In-situ concrete- 100 mm thick and with a density of not less than 2500 kg/m ³	45
(c) Precast concrete- 100 mm thick and without joints	45
Continued	

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Deemed-to-Satisfy Provisions

Table 2 continued	
Construction	STC (not less than)
Steel stud walling-	
(a) with 2 layers of 16 mm thick fire-protective grade plasterboard fixed to each face	45
(b) with-	
(i) 1 layer of 13 mm thick fire-protective grade plasterboard fixed to one face, and before fixing, 50 mm thick mineral or glass wool blanket or batts stapled to the back of each sheet so that the sheet is completely covered; and	
(ii) 2 layers of 13 mm thick fire-protective grade plasterboard fixed to the other face	45
(c) with-	
(i) 1 layer of 16 mm fire-protective grade plasterboard fixed to one face; and	
(ii) 50 mm thick mineral or glass wool blanket or batts wedged firmly between the studs; and	
(iii) 2 layers of fire-protective grade plasterboard fixed to the other face, the inner layer being 16 mm thick and the outer layer being 13 mm	45
(d) with 2 layers of 13 mm plasterboard on both sides of 75 mm studs	45
FLOORS-	
Concrete-	
(a) In-situ concrete slab- 125 mm thick and with a density of not less than 2200 kg/m ³	45
(b) in-situ concrete slab- 100 mm thick and with a density of not less than 2500 kg/m ³	45
(c) Pre-cast concrete slab- 100 mm thick and without joints	45
Timber - comprising-	
(a) timber joists not less than 175 mm x 50 mm; and	
(b) 75 mm thick mineral or glass wool blanket or batts cut to fit tightly between joists and laid on 10 mm thick plasterboard fixed to underside of joists; and	
(c) 25 mm thick mineral or glass wool blanket or batts laid over entire floor, including tops of joists before flooring is laid; and	
(d) tongued-and-groove dboards not less than 19 mm thick, secured to 75 mm x 50 mm battens; and	
(e) the assembled flooring laid over the joists, but not fixed to them, with the battens lying between the joists	45
Continued	

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Deemed-to-Satisfy Provisions

Table 2 continued	
Construction	STC (not less than)
DUCTS OR OTHER CONSTRUCTION SEPARATING SOIL AND WASTE PIPES FROM UNITS	
Masonry - not less than 90 mm thick	30
Plasterboard - 2 layers of plasterboard-	
(a) each 10 mm thick, fixed to timber studs not less than 75 mm x 50 mm and spaced at not more than 400 mm centres	30
(b) each 13 mm thick, one on each side of steel studs not less than 50 mm deep and spaced at not more than 400 mm centres	30

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SPECIFICATION **F5.5** IMPACT SOUND - TEST OF EQUIVALENCE

Deemed-to-Satisfy Provisions

1. Scope

This Specification describes a method of test to determine the comparative resistance of walls to the transmission of impact sound.

2. Construction to be tested

- (a) The test is conducted on a specimen of prototype wall construction and on a specimen of one or other of the constructions specified in Table F5.5.
- (b) The testing of a construction specified in Table F5.5 need not be repeated for subsequent comparisons provided complete records of the results, the test equipment and the technique of testing are kept so that identical equipment can be employed and an identical technique can be adopted in the testing of specimens of prototype wall construction.

3. Method

- (a) The wall constructions to be compared must be tested in accordance with AS 1191.
- (b) A horizontal steel platform 510 mm x 460 mm x 10 mm thick must be placed with one long edge in continuous and direct contact with the wall to be tested on the side of the wall on which the impact sound is to be generated.
- (c) A tapping machine complying with ISO 140/VI-1978 (E) must be mounted centrally on the steel platform.
- (d) The sound transmission through the wall must be determined in accordance with AS 1191 except that the tapping machine as mounted on the steel platform must be used as the source of sound.
- (e) The impact sound pressure levels measured in the receiving room must be converted into normalised levels using a reference equivalent absorption area of 10 m².

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SECTION **G**

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ANCILLARY PROVISIONS

- G1** Minor Structures and Components
- G2** Heating Appliances, Fireplaces,
Chimneys and Flues
- G3** Atrium Construction
- G4** Construction in Alpine Areas
- G5** Construction in Bushfire Prone Areas

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PART G1 MINOR STRUCTURES AND COMPONENTS

OBJECTIVE

- GO1** The objective of this Part is to-
- (a) safeguard people from illness caused by the discharge of *swimming pool* waste water; and
 - (b) protect *other property* from damage caused by the discharge of *swimming pool* waste water; and
 - (c) safeguard young children from drowning or injury in a *swimming pool*; and

Application:

GO1(a) and (b) do not apply in NT.

GO1(c) does not apply to in NSW, NT, Qld and WA.

GO1(c), in ACT, SA, Tas and Vic, only applies to a *swimming pool* associated with a Class 2 or 3 building, with a depth of water more than 300 mm.

- (d) safeguard occupants from illness or injury resulting from being accidentally locked inside spaces which are designed to be entered for short periods of time only and in which occupation for longer periods may be hazardous.

Tas GO1(e),(f),(g)

FUNCTIONAL STATEMENTS

- GF1.1** Adequate means for the disposal of *swimming pool* water and drainage is to be provided to a *swimming pool*.

Application:

GF1.1 does not apply in NT.

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GF1.2 Access by young children to *swimming pools* is to be restricted.

Application:

GF1.2 does not apply in NSW, NT, Qld and WA.

GF1.2, in ACT, SA, Tas and Vic, only applies to a *swimming pool* associated with a Class 2 or 3 building, with a depth of water more than 300 mm.

GF1.3 Any refrigerated or cooling chamber, strong-room and vault or the like that is capable of accommodating a person is to have safety measures to facilitate escape and for alerting people outside such a space in the event of an emergency.

SA GF1.4
Tas GF1.4 - 1.6

PERFORMANCE REQUIREMENTS

GP1.1 A *swimming pool* must have adequate means of draining the pool in a manner which will not-

- (a) cause illness to people; or
- (b) affect *other property*.

Application:

GP1.1 does not apply in NT.

GP1.2 A barrier must be provided to a *swimming pool* and must-

- (a) be continuous for the full extent of the hazard; and
- (b) be of a strength and rigidity to withstand the foreseeable impact of people; and
- (c) restrict the access of young children to the pool and the immediate pool surrounds; and
- (d) have any gates and doors fitted with latching devices not readily operated by young children, and constructed to automatically close and latch.

Application:

GP1.2 does not apply in NSW, NT, Qld and WA.

GP1.2, in ACT, SA, Tas and Vic, only applies to a *swimming pool* associated with a Class 2 or 3 building, with a depth of water more than 300 mm.

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- GP1.3** Any refrigerated or cooling chamber, or the like which is of sufficient size for a person to enter must-
- (a) have adequate means of communicating with or alerting other occupants in the building in the case of an emergency; and
 - (b) have a door which is-
 - (i) of adequate dimensions to allow occupants to readily escape; and
 - (ii) openable from inside without a key at all times.
- GP1.4** Any strong-room, vault or the like which is of sufficient size for a person to enter must-
- (a) have adequate means of communicating with or alerting other occupants in the building in the case of an emergency; and
 - (b) have internal lighting controllable only from within the room; and
 - (c) have an external indicator that the room is occupied.

SA GP1.5
Tas GP1.5 - 1.9

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PART G1 MINOR STRUCTURES AND COMPONENTS

Deemed-to-Satisfy Provisions

G1.0 Deemed-to-Satisfy Provisions

- (a) Performance Requirement GP1.1 must be complied with.

There is no deemed-to-satisfy provision for this Performance Requirement.

SA G1.0(b)
Tas G1.0(b)

- (b) Performance Requirements GP1.2 to GP1.4 are satisfied by complying with G1.1 and G1.2.

G1.1 Swimming pools

- (a) **Application:** The provisions or part provisions of this Clause do not apply in NSW, the Northern Territory, Queensland and Western Australia as follows:

- (i) **NSW** - safety fencing: restriction of access to swimming pools is regulated under the Swimming Pools Act 1992.
- (ii) **Northern Territory** - all provisions: swimming pools are controlled through Local Government by-laws; however Local Government Authorities are not responsible for building control.
- (iii) **Queensland** - safety fencing: restriction of access to swimming pools is regulated under the Queensland Building Act 1975 and the Standard Building Law.
- (iv) **Western Australia** - safety fencing: restriction of access to private swimming pools is regulated under the Local Government (Miscellaneous Provisions) Act 1960 and the Building Regulations 1989 as amended.

- (b) **Safety fencing:** A *swimming pool* associated with a Class 2 or 3 building, with a depth of water more than 300 mm must have suitable barriers to restrict access by young children to the immediate pool surrounds in accordance with AS 1926 Parts 1 and 2.

ACT G1.1(c)-(e)
Qld G1.1(c)
SA G1.1(c)
Tas G1.1(c)-(i)

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Deemed-to-Satisfy Provisions

G1.2 Refrigerated chambers, strong-rooms and vaults

Tas G1.2

- (a) A refrigerated or cooling chamber which is of sufficient size for a person to enter must-
 - (i) have a door which is in an opening with a clear width of not less than 600 mm and a clear height of not less than 1.5 m; and
 - (ii) at all times, be able to be opened from inside without a key.
- (b) A strong-room or a vault in a building must have-
 - (i) internal lighting controllable only from within the room; and
 - (ii) a pilot light located outside the room but controllable only by the switch for the internal lighting.
- (c) A refrigerated or cooling chamber, strong-room or vault must have a suitable alarm device located outside but controllable only from within the chamber, room or vault.

ACT G1.103
 NSW G1.101
 Qld G101
 Tas G101.1, G101.2
 Vic G1.101

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**PART G2 HEATING APPLIANCES, FIREPLACES,
CHIMNEYS AND FLUES**

OBJECTIVE

- GO2** The objective of this Part is to-
- (a) safeguard occupants from illness or injury caused by-
 - (i) fire from combustion appliances installed within a building; and
 - (ii) malfunction of a pressure vessel installed within a building; and
 - (b) protect a building from damage caused by the malfunction of a pressure vessel installed within.

FUNCTIONAL STATEMENTS

- GF2.1** Combustion appliances using controlled combustion located in a building are to be installed in a way which reduces the likelihood of fire spreading beyond the appliance.
- GF2.2** Pressure vessels located in a building are to be installed in a manner which will provide adequate safety for occupants.

PERFORMANCE REQUIREMENTS

- GP2.1** Where provided in a building, a combustion appliance and its associated components, including an open fire-place, chimney, flue, chute, hopper or the like, must be installed-
- (a) to withstand the temperatures likely to be generated by the appliance; and
 - (b) so that it does not raise the temperature of any building element to a level that would adversely affect the element's physical or mechanical properties or function; and

- (c) so that hot products of combustion will not-
 - (i) escape through the walls of the associated components; and
 - (ii) discharge in a position that will cause fire to spread to nearby *combustible* materials or allow smoke to penetrate through nearby *windows*, ventilation inlets, or the like.

GP2.2 When located in a building, a pressure vessel must be installed to avoid, during reasonably foreseeable conditions, the likelihood of-

- (a) leakage from the vessel which could cause damage to the building; and
- (b) rupture or other mechanical damage of the vessel which could cause damage to the building or injury to occupants.

PART G2 HEATING APPLIANCES, FIREPLACES, CHIMNEYS AND FLUES

Deemed-to-Satisfy Provisions

G2.0 Deemed-to-Satisfy Provisions

Performance Requirements GP2.1 and GP2.2 are satisfied by complying with G2.1 to G2.4.

G2.1 * * * * *

This clause has deliberately been left blank.

G2.2 Installation of appliances

The installation of a stove, heater or similar appliance in a building must comply with:

- (a) Domestic oil-fired appliances - Installation: AS 1691.
- (b) Domestic solid-fuel burning appliances - Installation: AS 2918.
- (c) Pressure equipment: AS/NZS 1200.

ACT G2.2(d),(e)

G2.3 Open fireplaces

An open fireplace, or solid-fuel burning appliance in which the fuel-burning compartment is not enclosed must have-

- (a) a hearth constructed of stone, concrete, masonry or similar *non-combustible* material so that-
 - (i) it extends not less than 300 mm beyond the front of the fireplace opening and not less than 150 mm beyond each side of that opening; and
 - (ii) it extends beyond the limits of the fireplace or appliance not less than 300 mm if the fireplace or appliance is free-standing from any wall of the room; and
 - (iii) its upper surface does not slope away from the grate or appliance; and

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- (iv) *combustible* material situated below the hearth but not below that part *required* to extend beyond the fireplace opening or the limits of the fireplace is not less than 155 mm from the upper surface of the hearth; and
- (b) walls forming the sides and back of the fireplace up to not less than 300 mm above the underside of the arch or lintel which-
 - (i) are constructed in 2 separate leaves of solid masonry not less than 180 mm thick, excluding any cavity; and
 - (ii) do not consist of concrete block masonry in the construction of the inner leaf; and
- (c) walls of the chimney above the level referred to in (b)-
 - (i) constructed of masonry units with a net volume, excluding cored and similar holes, not less than 75% of their gross volume, measured on the overall rectangular shape of the units, and with an actual thickness of not less than 100 mm; and
 - (ii) lined internally to a thickness of not less than 12 mm with rendering consisting of 1 part cement, 3 parts lime, and 10 parts sand by volume, or other suitable material; and
- (d) suitable damp-proof courses or flashings to maintain weatherproofing.

ACT G2.3(e)

G2.4 Incinerator rooms

- (a) If an incinerator is installed in a building any hopper giving access to a charging chute must be-
 - (i) *non-combustible*; and
 - (ii) gas-tight when closed; and
 - (iii) designed to return to the closed position after use; and
 - (iv) not attached to a chute that connects directly to a flue unless the hopper is located in the open air; and
 - (v) not located in a *required exit*.
- (b) A room containing an incinerator must be separated from other parts of the building by construction with an FRL of not less than 60/60/60.

PART G3 ATRIUM CONSTRUCTION

Deemed-to-Satisfy Provisions

Note: Part G3 contains deemed-to-satisfy provisions additional to those contained in Sections C, D and E for Atrium Construction.

G3.1 Atriums affected by this Part

This Part does not apply to an *atrium* which-

- (a) connects only 2 *storeys*; or
- (b) connects only 3 *storeys* if-
 - (i) each *storey* is provided with a sprinkler system complying with Specification E1.5 throughout; and
 - (ii) one of those *storeys* is situated at a level at which there is direct egress to a road or *open space*.

G3.2 Dimensions of atrium well

An *atrium well* must have a width throughout the well that is able to contain a cylinder having a horizontal diameter of not less than 6 m.

G3.3 Separation of atrium by bounding walls

An *atrium* must be separated from the remainder of the building at each *storey* by bounding walls set back not more than 3.5 m from the perimeter of the *atrium well* except in the case of the walls at no more than 3 consecutive *storeys* if-

- (a) one of those *storeys* is at a level at which direct egress to a road or *open space* is provided; and
- (b) the sum of the *floor areas* of those *storeys* that are contained within the *atrium* is not more than the maximum area that is permitted in Table C2.2.

G3.4 Construction of bounding walls

Bounding walls must-

- (a) have an FRL of not less than 60/60/60, and-

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- (i) extend from the floor of the *storey* to the underside of the floor next above or to the underside of the roof; and
- (ii) have any door openings protected with *self-closing* or *automatic* - /60/30 fire doors; or
- (b) be constructed of fixed toughened safety glass, or wired safety glass in *non-combustible* frames, with-
 - (i) any door openings fitted with a *self-closing* smoke door complying with Specification C3.4; and
 - (ii) the walls and doors protected with wall-wetting systems in accordance with Specification G3.8; and
 - (iii) a fire barrier with an FRL of not less than - /60/30 installed in any ceiling spaces above the wall.

G3.5 Construction at balconies

If a bounding wall separating an *atrium* from the remainder of the building is set back from the perimeter of the *atrium well*, a balustrade that is imperforate and *non-combustible*, and not less than 1 m high must be provided.

G3.6 Separation at roof

In an *atrium*-

- (a) the roof must have the FRL prescribed in Table 3 of Specification C1.1; or
- (b) the roof structure and membrane must be protected by a sprinkler system complying with Specification E1.5.

G3.7 Means of egress

All areas within an *atrium* must have access to at least 2 *exits*.

G3.8 Fire and smoke control systems

Sprinkler systems, smoke control, fire detection and alarm systems, and emergency warning and intercommunication systems must be installed in compliance with Specification G3.8.

SPECIFICATION **G3.8** FIRE AND SMOKE CONTROL IN BUILDINGS CONTAINING ATRIUMS

Deemed-to-Satisfy Provisions

1. SCOPE

This Specification sets out the requirements for the design and operation of systems of fire and smoke control in buildings containing an *atrium*.

2. AUTOMATIC FIRE SPRINKLER SYSTEM

2.1 General requirement

A sprinkler system complying with Specification E1.5 must be installed in every building containing an *atrium*, except where varied or superseded by this Specification.

2.2 Roof protection

A roof of an *atrium* which does not have the FRL prescribed in Specification C1.1 or the deemed-to-satisfy provisions of Part C2 must be protected by *automatic* sprinklers arranged to wet both the covering membrane and supporting structure if the roof is-

- (a) less than 12 m above the floor of the *atrium* or the floor of the highest *storey* where the bounding construction is set back more than 3.5 m from the *atrium well* if a Class 2, 3, 5 or 9 part of a building is open to the *atrium*; or
- (b) less than 20 m above the floor of the *atrium* or the floor of the highest *storey* where the bounding construction is set back more than 3.5 m from the *atrium well* if a Class 6, 7 or 8 part of a building is open to the *atrium*,

and the temperature rating of sprinkler heads providing roof protection must be within the range 79°C - 100°C.

2.3 Atrium floor protection

The floor of the *atrium* must be protected by sprinklers with-

- (a) the use of sidewall pattern sprinkler heads together with overhead sprinklers where dictated by the dimensions of the *atrium*; and

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- (b) sprinkler heads of the fast response type, installed with suitable *non-combustible* heat collector plates of 200 mm minimum diameter to ensure activation by a rising fire plume.

2.4 Sprinkler systems to glazed walls**2.4.1 Location of protection**

Where an *atrium* is separated from the remainder of the building by walls or doors incorporating glazing, a wall wetting system with suitable *non-combustible* heat collector plates of 200 mm diameter must be provided to protect the glazing as follows:

- (a) On the *atrium* side of the glazing - to all glazed walls which are set back more than 3.5 m from the *atrium well*.
- (b) On the *atrium* side of the glazing - to all glazed walls which are not set back, or are set back 3.5 m or less, from the *atrium well*, for all levels which are less than-
- (i) 12 m above the floor of an *atrium* or the floor of the highest *storey* where the bounding wall is set back more than 3.5 m from the *atrium well* if a Class 2, 3, 5 or 9 part of the building is open to the *atrium*; or
 - (ii) 20 m above the floor of an *atrium* or the floor of the highest *storey* where the bounding wall is set back more than 3.5 m from the *atrium well* if a Class 6, 7 or 8 part of the building is open to the *atrium*.
- (c) On the side of the glazing away from the *atrium well* - to all glazing forming part of bounding wall at each *storey*.

2.4.2 Sprinkler head location

Sprinklers must be located in positions allowing full wetting of the glazing surfaces without wetting adjacent sprinkler heads.

2.4.3 Head rating and response time

Sprinkler heads must be of the fast response type and have a maximum temperature rating of 74°C.

2.4.4 Water discharge rate

The rate of water discharge to protect glazing must be not less than-

- (a) on the *atrium* side of the glazing-
- (i) 0.25 L/s.m² where glazing is not set back from the *atrium well*; or

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- (ii) 0.167 L/s.m² where glazing is set back from the *atrium well*; and
- (b) on the side away from the *atrium well* - 0.167 L/s.m².

2.4.5 Water supply

In addition to that of the basic sprinkler protection for the building, the water supply to *required* wall wetting systems must be of adequate capacity to accommodate the following on the *atrium* side of the glazing:

- (a) Where the bounding walls are set back less than 3.5 m from the *atrium well* - wall wetting of a part not less than 6 m long for a height of not less than-
 - (i) 12 m above the floor of an *atrium* or the floor of the highest *storey* where the bounding wall is set back more than 3.5 m from the *atrium well* if a Class 2, 3, 5 or 9 part of the building is open to the *atrium*; or
 - (ii) 20 m above the floor of an *atrium* or the floor of the highest *storey* where the bounding wall is set back more than 3.5 m from the *atrium well* if a Class 6, 7 or 8 part of the building is open to the *atrium*; and
- (b) Where the walls are set back 3.5 m or more from the *atrium well* - wetting of a part not less than 12 m long on one *storey*.

2.5 Stop valves

- (a) Basic sprinkler and wall wetting systems protecting a building containing an *atrium* must be provided with easily accessible and identified stop valves.
- (b) Sprinkler and wall wetting systems must be provided with independent stop valves.
- (c) Sprinkler heads protecting the roof of the *atrium* must be provided with a stop valve.
- (d) Stop valve to wall wetting and roof sprinklers may be of the gate type.
- (e) All sprinkler and wall wetting stop valves must be monitored to detect unauthorised closure.

*Deemed-to-Satisfy Provisions***3 SMOKE CONTROL SYSTEM****3.1 General requirements**

Except where varied or superseded by this Specification, mechanical air-handling systems in a building containing an *atrium* must comply with AS 1668.1.

3.2 Operation of atrium mechanical air-handling systems

Mechanical air-handling systems serving an *atrium* must be designed to operate so that during a fire-

- (a) a tenable atmosphere is maintained in all paths of travel along balconies to *required exits* during the period of evacuation; and
- (b) smoke exhaust fans serving the *atrium* are only activated when smoke enters the *atrium*; and
- (c) central plant systems do not use the *atrium* as a return air path; and
- (d) central plant systems which use return air paths remote from the *atrium*-
 - (i) cycle to the full outside air mode; and
 - (ii) stop supply air to the fire affected *storey* or *fire compartment*; and
 - (iii) continue to fully exhaust the fire affected *storey* or *fire compartment* and reduce the exhaust from other *storeys* or *fire compartments* by at least 75%; and
 - (iv) continue to supply air to *fire compartments* or *storeys* other than the fire affected *storey* or *fire compartment*; and
- (e) fans performing relief or exhaust duty from the *atrium* stop normal operation; and
- (f) floor by floor, or unitary, air-handling plant serving a single *fire compartment* or *storey*-
 - (i) ceases normal operation in the fire affected *storey* or *fire compartment*; and
 - (ii) commences full relief or exhaust from that fire affected *storey* or *fire compartment*; and
 - (iii) continue to supply air to *fire compartments* or *storeys* other than the fire affected *storey* or *fire compartment*.

*Deemed-to-Satisfy Provisions***3.3 Activation of smoke control system**

- (a) The smoke control system must be activated by-
 - (i) operation of an *automatic* fire alarm; or
 - (ii) operation of the sprinkler system; or
 - (iii) a manual start switch.
- (b) All controls for the smoke control system must be located-
 - (i) in the fire control room; or
 - (ii) in the emergency control centre, (if any); or
 - (iii) adjacent to the sprinkler control valves; or
 - (iv) incorporated in the Fire Indicator Board.

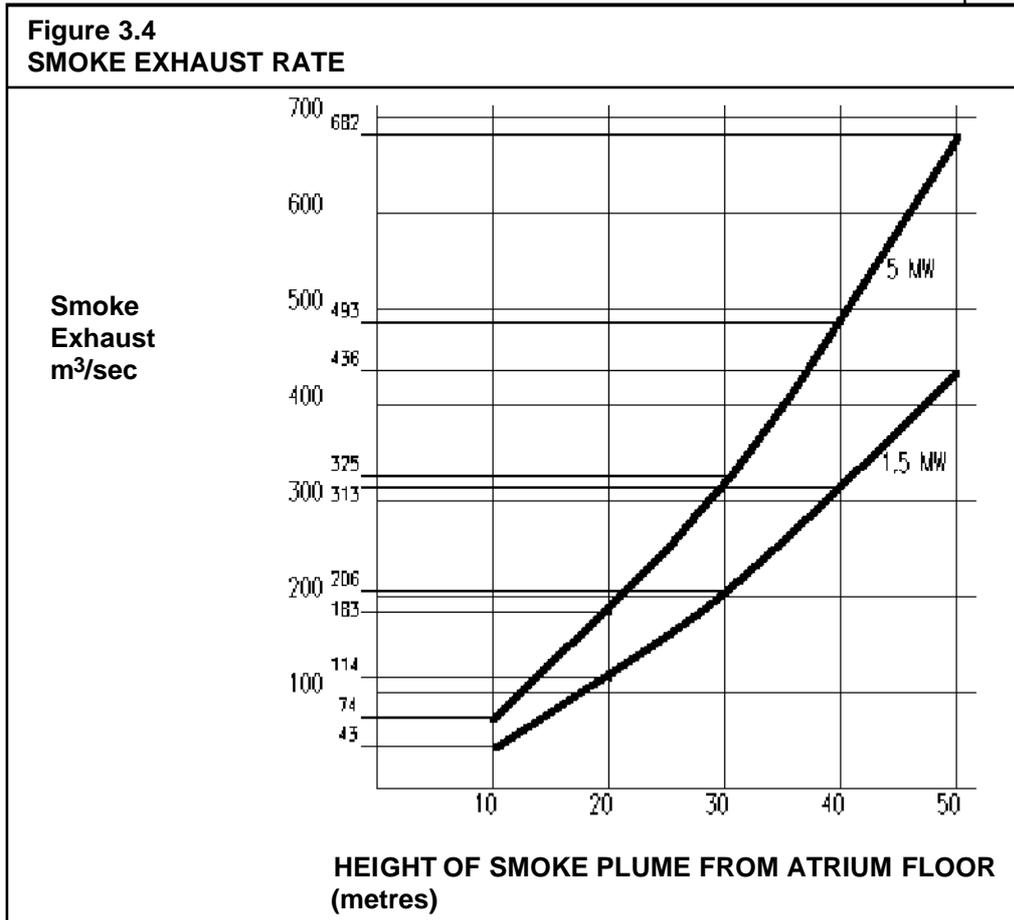
3.4 Smoke exhaust system

A smoke exhaust system serving an *atrium* must be designed on the basis of-

- (a) the sprinkler system limiting the size of a fire to-
 - (i) a heat output of 1.5 MW and perimeter of 7.5 m if a Class 2, 3, 5 or 9 part of the building is open to the *atrium*; or
 - (ii) a heat output of 5 MW and perimeter of 12 m if a Class 6, 7 or 8 part of the building is open to the *atrium*;
- (b) a smoke plume reaching a level 3 m above the highest *storey* having a path of travel to a *required exit* along a balcony bounding the *atrium well*, and not less than-
 - (i) 12 m above the floor of an *atrium* or the floor of the highest *storey* where the bounding wall is set back more than 3.5 m from the *atrium well* if a Class 2, 3, 5 or 9 part of the building is open to the *atrium*; or
 - (ii) 20 m above the floor of an *atrium* or the floor of the highest *storey* where the bounding construction is set back more than 3.5 m from the *atrium well* if a Class 6, 7 or 8 part of the building is open to the *atrium*; and
- (c) the smoke exhaust system discharging smoke at a rate of not less than that shown in Figure 3.4 for the appropriate height of smoke plume and fire size-
 - (i) from the top of the *atrium*; or
 - (ii) horizontally where calculations of wind velocity induced pressure profiles for the building verify that the exhaust system will operate effectively for all wind directions.

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**Figure 3.4
SMOKE EXHAUST RATE**



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3.5 Upward air velocity

Notwithstanding 3.4(c), the average upward air velocity in the atrium, due to the required smoke exhaust quantity must-

- (a) be not less than 0.2 m/s at any level over an 18 m height above the floor of the atrium; and
- (b) not exceed the following maximum velocities in atriums of constant cross sectional plan area-
 - (i) for occupancy classification qualifying for 1.5 MW fire size - 3.5 m/s.
 - (ii) for occupancy classifications qualifying for 5 MW fire size - 5 m/s.

3.6 Exhaust fans

- (a) Smoke exhaust must be provided by fans capable of continuous and required operation for a period of not less than 1 hour when handling exhaust gases at 200°C.

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- (b) Where a Class 2, 3 or 9 part of a building adjoins an *atrium*, the *atrium* must be provided with a minimum of 3 fans each capable of 50% of the total *required* smoke exhaust capacity.
- (c) *Atriums* other than those referred to in (b) must be provided with a minimum of 2 fans each capable of 50% of the total *required* smoke exhaust capacity.

3.7 Smoke and heat vents

Notwithstanding Clause 3.6, *automatic* vents complying with AS 2665 may be used, except where a Class 6 part of a building adjoins the *atrium*, in lieu of exhaust fans provided that-

- (a) the height from the *atrium* floor to the bottom of the highest vent is not more than 12 m; and
- (b) the vents are fitted with a remote manual operation switch located adjacent to the sprinkler control valves or incorporated in the Fire Indicator Board.

3.8 Make-up air supply

- (a) Uniformly distributed make-up air must be provided to the *atrium* exhaust system from-
 - (i) outside the *atrium* at or near the lowest *storey* level; and
 - (ii) relief air from non-fire *storeys*.
- (b) A discharge volume sufficient to maintain a velocity of not less than 0.1 m/s towards the *atrium well* must be provided on all *storeys* where the bounding wall is set back from the *atrium well*.
- (c) The requirements of (a)(i) are satisfied if make-up air is provided to the *atrium* exhaust system in such a manner as to prevent, as far as possible, disturbance of the smoke layer due to turbulence created by the incoming air, through-
 - (i) openings directly from the outside air to the *atrium* and located as close as practicable to the lowest level of the *atrium*; or
 - (ii) ducts from the outside air to the *atrium* which deliver air as close as practicable to the lowest level of the *atrium* and, where passing through any other *fire compartment* having an FRL of at least 60/60/60; or
 - (iii) a combination of (i) or (ii).

*Deemed-to-Satisfy Provisions***4 FIRE DETECTION AND ALARM SYSTEM****4.1 General requirements**

Except where superseded by this Specification, *automatic* fire detection and alarm systems in a building containing an *atrium* must comply with AS 1670.

4.2 Smoke detection system

Smoke detection within an *atrium*-

- (a) must be provided within all outside air intakes and at individual floor return air intakes of all air-handling systems to initiate *automatic* fire mode operation, and where applicable, comply with the restart facilities in AS 1668.1;
- (b) must operate at an obscuration level not greater than 0.5% per metre with compensation for external airborne contamination as necessary;
- (c) must sample air within the *atrium* and in *storeys* where the bounding wall is set back more than 3.5 m from the *atrium well*;
- (d) must be calibrated to compensate for smoke dilution where sampling occurs within return air path common to more than one room; and
- (e) may incorporate beam type detectors to sense smoke in an *atrium* in a Class 5, 6, 7 or 8 building with an *effective height* of not more than 25 m if-
 - (i) the beam detectors are located at intervals of not more than 3 *storeys*; and
 - (ii) arranged to scan at 90 degrees orientation to adjacent beam units.

4.3 Smoke detection in spaces separated from the atrium by bounding walls

Smoke detection systems must be located at all return and relief air openings associated with the building air-handling systems and be-

- (a) of the sampling type system as *required* in 4.2; or
- (b) of the point type optical smoke detector.

*Deemed-to-Satisfy Provisions***4.4 Alarm systems**

- (a) A break-glass fire alarm point must be provided at each door to a *fire-isolated stairway, fire-isolated ramp, or fire-isolated passageway*.
- (b) A staged alarm must be provided where an air sampling type smoke detection system is provided for the atrium, and must operate as follows:
 - (i) Alert building management when abnormal smoke levels of 0.03% obscuration per metre are detected.
 - (ii) Initiate a second alarm to management and start all smoke control systems including pressurisation of escape routes when smoke levels of 0.07% obscuration per metre are detected.
 - (iii) Automatically call the Fire Authority, activate the emergency warning and intercommunication systems, and de-activate all plant not necessary for fire safety within the building when smoke levels of 0.09% obscuration per metre are detected.
- (c) Beam and point type smoke detectors *required* must simultaneously operate all functions referred to above and activate at the level set out in AS 1668.1.

5 EVACUATION WARNING AND INTERCOMMUNICATION SYSTEM

All buildings containing an *atrium* must be provided with an emergency warning and intercommunication system which-

- (a) complies with AS 2220 Parts 1 and 2; and
- (b) incorporates visible warning signs that-
 - (i) operate upon the "action" signal; and
 - (ii) display the words "EVAC AREA" in red with letters conforming with the requirements of the deemed-to-satisfy provisions of Part E4 for *exit* signs.

*Deemed-to-Satisfy Provisions***6 STANDBY POWER SYSTEM**

- (a) If a *required* path of travel to an *exit* is within an *atrium*, a suitable alternative power supply must be provided to operate *required* safety systems, including sprinkler systems and hydrant pumps, air handling systems, alarms, warning and communication systems, and emergency lighting circuits.
- (b) The alternative power supply must-
- (i) be connected *automatically* if the normal power supply fails; and
 - (ii) if located within the building, be separated from the remainder of the building by an enclosure with an FRL of at least 120/120/120 and be connected to the safety systems by means of suitable *fire-resisting* cabling.
- (c) The requirements of (a) are satisfied by-
- (i) a single medium voltage supply taken from an electricity substation situated within, or adjacent to, the building concerned where the power supply to the substation consists of two or more high voltage cables each taking electricity from separate transformers; or
 - (ii) two or more medium voltage supplies each taking electricity from separate electricity substations situated-
 - (A) outside the building concerned; and
 - (B) at a suitable distance from each other; or
 - (iii) a single medium voltage supply taken from an electricity substation together with an electricity generating plant capable of-
 - (A) generating a medium voltage supply; and
 - (B) starting and taking the *required* electrical load within a period of not more than 30 seconds from the time of normal supply failure.

7 SYSTEM FOR EXCLUDING SMOKE FROM FIRE-ISOLATED EXITS

- (a) *Required* fire-isolated *exits* in a building containing an *atrium* must be protected from the entry of smoke in accordance with E2.2.

PART G4 CONSTRUCTION IN ALPINE AREAS

OBJECTIVE

GO4 The objective of this Part is to safeguard occupants in *alpine areas* from illness or injury from an emergency while evacuating a building.

Application:

GO4 applies to a building constructed in an *alpine area* and overrules other provisions of the BCA.

FUNCTIONAL STATEMENT

GF4.1 A building in an *alpine area* is to be provided with additional measures in view of the increased difficulties in fire-fighting and maintaining access and means of egress in snow conditions.

Application:

GF4.1 applies to a building constructed in an *alpine area* and overrules other provisions of the BCA.

PERFORMANCE REQUIREMENTS

GP4.1 An external doorway from a building in an *alpine area* must be installed so that opening the door is not obstructed by snow or ice.

Application:

GP4.1 applies to a building constructed in an *alpine area* overrules other provisions of the BCA.

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GP4.2 A building in an *alpine area* containing external trafficable structures forming part of the means of egress must be constructed so that those structures remain, as far as practicable, useable under snow conditions.

Application:

GP4.2 applies to a building constructed in an *alpine area* and overrules other provisions of the BCA.

GP4.3 A building in an *alpine area* must be constructed so that snow or ice is not shed from the building onto the allotment, any adjoining allotment, road or public space in a location or manner that will-

- (a) obstruct a means of egress from any building to a road or *open space*; or
- (b) otherwise endanger people.

Application:

GP4.3 applies to a building constructed in an *alpine area* and overrules other provisions of the BCA.

GP4.4 A building in an *alpine area* must have a *fire safety system* installed to-

- (a) facilitate fire-fighting operations; and
- (b) alert occupants in the event of an emergency.

PART G4 CONSTRUCTION IN ALPINE AREAS

Deemed-to-Satisfy Provisions

G4.0 Deemed-to-Satisfy Provisions

Performance requirements GP4.1 to GP4.4 are satisfied by complying with G4.1 to G4.9.

G4.1 Application of Part

- (a) The deemed-to-satisfy provisions of this Part apply to any building constructed in an *alpine area* in addition to other deemed-to-satisfy provisions of the BCA.
- (b) Where any deemed-to-satisfy provisions are in conflict, the provisions of this Part take precedence.

G4.2 * * * * *

Note This clause has deliberately been left blank.

G4.3 External doorways

- (a) A door fitted to an external doorway which may be subject to the build-up of snow must-
 - (i) only be capable of opening inwards; and
 - (ii) be marked "OPEN INWARDS" on the inside face of the door in letters not less than 75 mm high and in a colour contrasting with that of the background; and
 - (iii) if it serves a corridor or stairway, be positioned in an alcove or recess with-
 - (A) no horizontal dimension less than twice the width of the door; and
 - (B) the door positioned to open against a wall such that the distance from any part of its swing to the nearest point of entry of the stairway or corridor is not less than the width of the door.
- (b) Every threshold of a *required exit* doorway must be located so that snow or ice is not deposited in a manner that will obstruct means of egress from that doorway.

*Deemed-to-Satisfy Provisions***G4.4 Emergency lighting**

In a Class 2, 3, 5, 6, 7, 8 or 9 building, a system of emergency lighting must be installed in accordance with the deemed-to-satisfy provisions of Part E4-

- (a) in every stairway (other than those within a *sole-occupancy unit*); and
- (b) in every *public corridor*, public hallway or the like leading to an *exit*; and
- (c) externally above every doorway opening to a road or *open space*; and
- (d) in any *storey* of the building if illumination sufficient for safe egress will not be available under conditions of emergency.

G4.5 External ramps

An external ramp serving as an *exit* must have a gradient not steeper than -

- (a) 1 in 12; or
- (b) that required by the deemed-to-satisfy provisions of Part D3 if applicable.

G4.6 Discharge of exits

A building in an *alpine area* must be so constructed that-

- (a) if any part of an *external wall* is more than 3.6 m above the natural ground level - the distance of that part from a boundary other than a road alignment is not less than 2.5 m plus 100 mm for each 300 mm or part by which that part of the wall exceeds a height of 3.6 m; and
- (b) if an *exit* doorway discharges into a court between wings of a building - the wings are not less than 6 m apart; and
- (c) if an *exit* doorway is opposite a barrier which is more than 900 mm above the threshold of the doorway - the threshold is at a distance from that barrier of not less than twice the height of the barrier or 6 m, whichever is the lesser.

*Deemed-to-Satisfy Provisions***G4.7 External trafficable structures**

External stairways, ramps, access bridges or other trafficable structures must have-

- (a) a floor surface that consists of steel mesh or other suitable material if it is used as a means of egress; and
- (b) any *required* balustrade constructed so that its sides are not less than 75% open.

G4.8 Fire-fighting services and equipment

Every Class 2, 3, 5, 6, 7, 8 and 9 building must have-

- (a) a manually operated fire alarm system with call-points complying with AS 1670; and
- (b) fire hose reels and hydrants installed in accordance with the deemed-to-satisfy provisions of Part E1.

G4.9 Fire orders

Every Class 2, 3 or 9 building must display a notice clearly marked "FIRE ORDERS" in suitable locations near the main entrance and on each *storey*, explaining-

- (a) the method of operation of the fire alarm system and the location of all call-points; and
- (b) the location and methods of operation of all fire-fighting equipment; and
- (c) the location of all *exits*; and
- (d) the procedure for evacuation of the building.

PART **G5** CONSTRUCTION IN BUSHFIRE PRONE AREAS

OBJECTIVE

- GO5** The objective of this Part is to-
- (a) safeguard occupants from injury; and
 - (b) protect buildings, from the effects of a bushfire.

Application:

GO5 only applies to a Class 2 or 3 building in a *designated bushfire prone area* and applies in addition to other provisions of the BCA.

FUNCTIONAL STATEMENT

- GF5.1** A building constructed in a *designated bushfire prone area* is to provide a resistance to bushfires in order to reduce the danger to life and minimise the risk of the loss of the building.

Application:

GF5.1 only applies to a Class 2 or 3 building in a *designated bushfire prone area* and applies in addition to other provisions of the BCA.

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PERFORMANCE REQUIREMENT

GP5.1 A building that is constructed in a *designated bushfire prone area* must be provided with protection in the event of a bushfire to reduce the risk of ignition by embers until the fire front passes.

Application:

GP5.1 only applies to a Class 2 and 3 building in a *designated bushfire prone area* and applies in addition to other provisions of the BCA.

PART **G5** CONSTRUCTION IN BUSHFIRE PRONE AREAS

Deemed-to-Satisfy Provisions

G5.0 Deemed-to-Satisfy Provisions

Performance Requirement GP5.1 is satisfied by complying with G1.5 and G5.2.

G5.1 Application of Part

The deemed-to-satisfy provisions of this Part apply to Class 2 and 3 buildings in *designated bushfire prone areas*.

SA G5.2

G5.2 Protection

A Class 2 or 3 building in a *designated bushfire prone area* must comply with AS 3959.

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SECTION **H**

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SPECIAL USE BUILDINGS

H1 Theatres, Stages and Public Halls

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PART H1 THEATRES, STAGES AND PUBLIC HALLS

Deemed-to-Satisfy Provisions

Note: Part H1 contains deemed-to-satisfy provisions additional to those contained in Sections C, D and E for buildings containing theatres, stages and public halls.

H1.1 Application of Part

- (a) The deemed-to-satisfy provisions of this Part apply to every enclosed Class 9b building or part of a building which-
 - (i) is a *school* assembly, church or community hall with a *stage* and any *backstage* area with a total *floor area* of more than 300 m²; or
 - (ii) otherwise, has a *stage* and any *backstage* area with a total *floor area* of more than 200 m²; or
 - (iii) has a *stage* with an associated rigging loft.
- (b) Notwithstanding (a)-
 - (i) H1.4 applies to every open or enclosed Class 9b building; and
 - (ii) H1.7 applies to every enclosed Class 9b building.

H1.2 Separation

A theatre, public hall or the like must-

- (a) have a sprinkler system complying with Specification E 1.5; or
- (b) have the *stage*, *backstage* area and accessible under-*stage* area separated from the audience by a proscenium in accordance with H1.3.

H1.3 Proscenium wall construction

A proscenium wall must comply with Specification H1.3.

*Deemed-to-Satisfy Provisions***H1.4 Seating area**

In a seating area-

- (a) the gradient of the floor surface must not be steeper than 1 in 8, or the floor must be stepped so that-
 - (i) a line joining the nosings of consecutive steps does not exceed an angle of 30⁰ to the horizontal; and
 - (ii) the height of each step in the stepped floor is not more than 600 mm; and
 - (iii) the height of any opening in such a step is not more than 125 mm; and
- (b) if an aisle divides the stepped floor and the difference in level between any 2 consecutive steps-
 - (i) exceeds 230 mm but not 400 mm - an intermediate step must be provided in the aisle; and
 - (ii) exceeds 400 mm - 2 equally spaced intermediate steps must be provided in the aisle; and
 - (iii) the going of intermediate steps must be not less than 270 mm and such as to provide as nearly as practicable equal treads throughout the length of the aisle; and
- (c) the clearance between rows of fixed seats used for viewing performing arts, sport or recreational activities must be not less than-
 - (i) 300 mm if the distance to an aisle is not more than 3.5 m; or
 - (ii) 500 mm if the distance to an aisle is more than 3.5 m.

H1.5 Exits from theatre stages

- (a) The path of travel to an *exit* from a *stage* or performing area must not pass through the proscenium wall if the *stage* area is separated from the audience area with a proscenium wall.
- (b) *Required exits* from *backstage* and *under-stage* areas must be independent of those provided for the audience area.

H1.6 Access to platforms and lofts

A stairway that provides access to a service platform, rigging loft, or the like, must comply with AS 1657.

*Deemed-to-Satisfy Provisions***H1.7 Aisle lights in theatres**

In every enclosed Class 9b building, where in any part of the auditorium, the general lighting is dimmed or extinguished during public occupation and the floor is stepped or is inclined at a slope steeper than 1 in 12, aisle lights must be provided to illuminate the full length of the aisle and tread of each step.

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SPECIFICATION H1.3 CONSTRUCTION OF THEATRES WITH PROSCENIUM WALLS

Deemed-to-Satisfy Provisions

1. Scope

This Specification contains the requirements for the construction of proscenium walls for theatres, public halls, or the like.

2. Separation of stage areas, etc

- (a) Dressing rooms, scene docks, property rooms, workshops, associated store rooms and other ancillary areas must be-
 - (i) located on the *stage* side of the proscenium wall; and
 - (ii) separated from corridors and the like by construction having an FRL of not less than 60/60/60, and if of *lightweight construction*, complying with Specification C1.8.
- (b) The *stage* and *backstage* must be separated from other parts of the building other than the audience seating area by construction having an FRL of not less than 60/60/60, and if of *lightweight construction*, complying with Specification C1.8.
- (c) Any doorway in the construction referred to in paragraphs (a) and (b) must be protected by a *self-closing* - /60/30 fire door.

3. Proscenium wall construction

A proscenium wall must-

- (a) extend to the underside of the roof covering or the underside of the structural floor next above; and
- (b) have an FRL of not less than 60/60/60, and if of *lightweight construction*, comply with Specification C1.8.

4. Combustible materials not to cross proscenium wall

Timber purlins or other *combustible* material must not pass through or cross any proscenium wall.

*Deemed-to-Satisfy Provisions***5. Protection of openings in proscenium wall**

Every opening in a proscenium wall must be protected-

- (a) at the principal opening, by a curtain in accordance with Clause 6 which is-
 - (i) capable of closing the proscenium opening within 35 seconds either by gravity slide or motor assisted mechanisms; and
 - (ii) operated by a system of *automatic* heat activated devices, manually operated devices or push button emergency devices; and
 - (iii) able to be operated from either the stage side or the audience side of the curtain; and
- (b) at any doorway in the wall, by a *self-closing* - /60/30 fire door.

6. Proscenium curtains

A curtain *required* by Clause 5 must be-

- (a) a fire safety curtain-
 - (i) made of *non-combustible* material; and
 - (ii) capable of withstanding a pressure differential of 0.5 kPa over its entire surface area; and
 - (iii) so fitted that when fully lowered it inhibits the penetration of smoke around the perimeter of the opening, from the *stage*; or
- (b) a curtain-
 - (i) having a *Spread-of-Flame Index* not greater than 0 and a *Smoke-Developed Index* not greater than 3; and
 - (ii) protected by a deluge system of open sprinklers installed along the full width of the curtain.

SECTION



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MAINTENANCE

I1 Equipment and Safety Installations

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PART 11 EQUIPMENT AND SAFETY INSTALLATIONS

OBJECTIVE

- IO1** The objective of this Part is to provide that people will be afforded the same level of protection from illness, injury and loss of amenity throughout the life of the building by ensuring that it continues to satisfy the other objectives of the BCA.

FUNCTIONAL STATEMENT

- IF1.1** A building is to be adequately maintained to ensure the safety of people from illness or injury.

PERFORMANCE REQUIREMENT

- IP1.1** Equipment, installations and components essential to the safety of the people must be adequately maintained in such condition that will enable their proper performance.

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PART 11 EQUIPMENT AND SAFETY INSTALLATIONS*Deemed-to-Satisfy Provisions***I1.0 Deemed-to-Satisfy Provisions**

Performance Requirement IP1.1 is satisfied by complying with I1.1 and I1.2.

NSW I1.1
NT I1.1
SA I1.1

I1.1 Safety installations

Safety installations in buildings must be adequately maintained.

NSW I1.2

I1.2 Mechanical ventilation and warm water systems

Mechanical ventilation and warm water systems must be maintained in accordance with AS/NZS 3666.2

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APPENDIX

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AUSTRALIAN CAPITAL TERRITORY

INTRODUCTION

The Australian Capital Territory BCA Appendix forms part of the ACT Building Code published in accordance with the provisions of the ACT Building Act 1972. This Appendix contains variations and additions to the Building Code of Australia which are necessary for the effective application of the Code in the Australian Capital Territory.

AUSTRALIAN CAPITAL TERRITORY - BCA APPENDIX

CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application in the Australian Capital Territory as follows:

A - GENERAL PROVISIONS

- ACT Specification A1.3
Standards Adopted by Reference
- ACT AO2 Objective
- ACT AF2.1 - ACT AF2.3
Functional Statements
- ACT AP2.1 - ACT AP2.3
Performance Requirements
- ACT A2.0 Deemed-to-satisfy Provisions
- ACT A2.101 Hazardous materials
- ACT A2.102 Control of litter on building sites
- ACT A2.103 Waste management

D - ACCESS AND EGRESS

- ACT D1.101 Notices in fire-isolated stairs
- ACT D2.13 Treads and risers
- ACT D2.103 Paving surfaces in public areas

F - HEALTH AND AMENITY

- ACT F1.0 Deemed-to-Satisfy Provisions
- ACT F1.1 Drainage
- ACT FO3 Objective
- ACT FF3.2 Functional Statement
- ACT FP3.2 Performance Requirement
- ACT F3.0 Deemed-to-satisfy Provisions
- ACT F3.101 Carparking facilities

Continued

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Contents continued

ACT PART F6 Energy efficiency

- ACT FO6 Objective
- ACT FF6.1 Functional Statement
- ACT FP6.1 Performance Requirement
- ACT F6.1 Energy efficient design
- ACT F6.2 Exemptions
- ACT F6.3 Fire resistance

G - ANCILLARY PROVISIONS

- ACT G1.1 Swimming pools
- ACT G1.103 Awnings and projections
- ACT G2.2 Installation of appliances
- ACT G2.3 Open fireplaces deemed-to-comply

OTHER LEGISLATION AFFECTING BUILDINGS

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SECTION A GENERAL PROVISIONS

PART A1 INTERPRETATION

ACT Specification A1.3 STANDARDS ADOPTED BY REFERENCE

Insert in Table 1 of Specification A1.3 the following:

ACT Table 1: SCHEDULE OF REFERENCED DOCUMENTS			
No.	Date	Title	BCA Clause(s)
AS 1375	1985	Industrial fuel-fired appliances	ACT G2.2,
AS 1691	1985	Domestic oil-fired appliances- Installation Amdt 1, Sept 1985	ACT G2.3,
AS 1692	1989	Tanks for flammable and combustible liquids	ACT G2.2
AS 3000	1991	SAA Wiring Rules	ACT G1.1 (f)
AS 3500 Part 3	1990	National Plumbing and Drainage Code Stormwater drainage	ACT F1.1
AS 3661 Part 1	1993	Slip resistance of pedestrian surfaces Requirements	ACT D2.13, ACT D2.103
		Work Safe Australia Asbestos Code of Practice and Guidance Notes, August 1988	ACT A2.101

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PART A2 ACCEPTANCE OF DESIGN AND CONSTRUCTION

OBJECTIVE

Add ACT AO2 as follows:

ACT AO2 The Objective of this Part is to-

- (a) safeguard people from illness resulting from exposure to asbestos building materials during removal and disposal; and
- (b) prevent wind blown litter from building sites fouling roads and public land; and
- (c) safeguard people from injury caused by infection or contamination from solid waste.

FUNCTIONAL STATEMENTS

Add ACT AF2.1 to ACT AF2.3 as follows:

- ACT AF2.1** Asbestos building material shall be removed and disposed of in a safe manner.
- ACT AF2.2** Building litter must be prevented from spreading around and beyond the site boundary.
- ACT AF2.3** Buildings must be provided with space and facilities for the collection, and safe hygienic holding prior to disposal of solid waste arising from the intended use of the building.

PERFORMANCE REQUIREMENTS

Add ACT AP2.1 to ACT AP2.3 as follows:

- ACT AP2.1** When asbestos-based material in any form or in any mixture thereof, or any material containing loose asbestos including asbestos fluff insulation, asbestos sheeting, lagging, fire protection and the like is removed, it must be handled and disposed of safely.
- ACT AP2.2** Sufficient containers must be provided on building sites to store building waste that is likely to become windblown.
- ACT AP2.3** Provision must be made within buildings for the collection and temporary holding of solid waste. The design shall accommodate screening, volume of waste, disposal, logistics and access.

Add ACT A2.0 as follows:

ACT A2.0 Deemed-to-Satisfy Provisions

Performance Requirements ACT AP2.1 to ACT AP2.3 are satisfied by complying with ACT A2.101 to ACT A2.103

Add ACT A2.101 to ACT A2.103 as follows:

ACT A2.101 Hazardous materials

Asbestos-based materials must be handled and disposed of in accordance with the Worksafe Australia Code of Practice and Guidance Notes.

ACT A2.102 Control of litter on building sites

- (a) On site building waste must be stored in suitable size plastic or metal bins and removed from the site at regular intervals.
- (b) For the purpose of this clause, building waste includes plastic containers, plastic and paper wrappings, or any waste that can be carried by wind.

ACT A2.103 Waste management

Garbage facilities must be designed and constructed in accordance with the ACT Waste Management Design Guide.

SECTION D ACCESS AND EGRESS

PART D1 PROVISION FOR ESCAPE

Add ACT D1.101 as follows:

ACT D1.101 Notices in fire-isolated stairs

- (a) Every *fire-isolated stairway* must have a notice displayed in a conspicuous position at the landing on each *storey* level to the effect of the following:

OFFENCES RELATING TO FIRE STAIRS

Under the Fire Brigade Act it is an offence to:

1. Place anything in this stairway or any associated passageway leading to the exterior of the building which may impede the free passage of persons;
2. Interfere with or cause obstruction or impediment to the normal operation of fire doors providing access to this stairway; or
3. Remove, damage or otherwise interfere with this notice.

- (b) In any notice displayed in accordance with (a)-
- (i) the words "OFFENCES RELATING TO FIRE STAIRS" must be in letters not less than 20 mm in height;
 - (ii) all other letters and figures in the remainder of the notice must be not less than 3 mm in height; and
 - (iii) the notice must be clearly legible with lettering of a colour contrasting with the background embossed or cast into a permanent plate securely and permanently fixed to the wall.

PART D2 CONSTRUCTION OF EXITS

Delete D2.13(e) and insert ACT D2.13(e) as follows:

ACT D2.13 Treads and risers

- (e) treads which have a slip resistant finish or a suitable slip resistant strip near the edge of the nosings that meet the requirements of AS 3661.1.

Add ACT D2.103 as follows:

ACT D2.103 Paving surfaces in public areas

Paving and floor surfaces in public areas, such as colonnades, arcades and entrance lobbies, must have a slip resistant finish which meets the requirements of AS 3661.1.

SECTION F HEALTH AND AMENITY

PART F1 DAMP AND WATERPROOFING

Delete F1.0 and insert ACT F1.0 as follows:

ACT F1.0 Deemed-to-Satisfy Provisions

Performance Requirements FP1.1 to FP1.7 are satisfied by complying with ACT F1.1 and F1.5 to F1.12.

Delete F1.1 and insert ACT F1.1 as follows:

ACT F1.1 Drainage

Stormwater drainage must comply with AS 3500.3.

PART F3 ROOM SIZES

OBJECTIVE

Delete FO3 and insert ACT FO3 as follows:

ACT FO3 The objective of this Part is to-

- (a) safeguard occupants from injury or loss of amenity caused by inadequate height of a room or space; and
- (b) safeguard people from injury resulting from the movement of vehicles into, within and out of buildings.

FUNCTIONAL STATEMENTS

After FF3.1 insert ACT FF3.2 as follows:

ACT FF3.2 Buildings shall be provided with reasonable and adequate access to enable safe and easy movement of vehicles.

PERFORMANCE REQUIREMENT

After FP3.1 insert ACT FP3.2 as follows:

ACT FP 3.2 Vehicle access routes within buildings and on the site must enable people to safely and easily

- (a) manoeuvre vehicles, and;
- (b) manoeuvre and park cars.

Delete F3.0 and insert ACT F3.0 as follows:

ACT F3.0 Deemed-to-Satisfy Provisions

Performance Requirements FP3.1 and ACT FP 3.2 are satisfied by complying with F3.1 and ACT F3.101.

After F3.1 insert ACT F3.101 as follows:

ACT F3.101 Car parking facilities

Parking spaces, aisle dimensions, parking arrangements, access signage, vehicle turning paths, ramp gradients, access driveways, approaches, queuing areas and headroom clearances must be designed in accordance with AS 2890.1.

Add Part F6 as follows:

ACT PART F6 ENERGY EFFICIENCY

OBJECTIVES

ACT FO6 The objective is to facilitate efficient use of energy in buildings.

FUNCTIONAL STATEMENT

ACT FF6.1 Buildings must be designed to ensure efficient energy use.

PERFORMANCE REQUIREMENT

ACT FP6.1 A building, including carpets and internal fittings, must achieve an annual energy consumption rate for heating and cooling not greater than 255 Megajoules/m² based on the ACT climate zone.

Application:

FO6, FF6.1 and FP6.1 only applies to a Class 2 or 3 building or Class 4 parts.

ACT F6.0 Deemed-to satisfy Provisions

Performance Requirement ACT FP6.1 is satisfied by complying with ACT F6.1 to F6.3.

ACT F6.1 Energy efficient design

- (a) A building must achieve an ACT House Energy Rating of 4 Stars as assessed by an accredited ACT House Energy Assessor.
- (b) An addition must-
 - (i) achieve an ACT House Energy Rating of 4 Stars as assessed by an accredited ACT House Energy Assessor; or
 - (ii) be fully insulated in accordance with ACT Table F6 and have a -
 - (A) concrete floor; or
 - (B) timber floor with an R rating of 1 including carpet.

<p>ACT Table F6 MINIMUM INSULATION MATERIAL</p>
<p>Roofs</p> <ul style="list-style-type: none"> (a) R3 insulation material in the ceiling space; or (b) R2 insulation material in exposed raked ceiling (concession)
<p>Walls</p> <p>R1.5 insulation material in the external wall space</p>

ACT F6.2 Exemptions

The requirements of this Part do not apply to the following types of construction:

- (a) Cavity brick, earthwall construction, ashlar stone or other masonry walls which have a thickness (excluding any cavity) of not less than 180 mm do not require wall insulation.
- (b) Class 10 structures forming part of a Class 2 or 3 building or Class 4 part.
- (c) A ceiling or underfloor space to an addition where unrestricted access for the installation of insulation will be available after the completion of construction.

ACT F6.3 Fire resistance

When tested in accordance with AS 1530.3 a thermal insulation material must have a *Spread-of-Flame Index* of 0 and a *Smoke-Developed Index* not greater than 4.

SECTION G ANCILLARY PROVISIONS

PART G1 MINOR STRUCTURES AND COMPONENTS

Add ACT G1.1(c), (d) and (e) as follows:

ACT G1.1 Swimming pools

- (c) Indoor or outdoor permanent bathing, wading and *swimming pools* must-
- (i) where the capacity of the pool exceeds 10 m³-
 - (A) be of the recirculation type in which the water circulation is maintained through the pool by pumps, the water drawn from the pool being clarified and disinfected before being returned to the pool;
 - (B) have an outlet sump with antivortex cover or grating and have a skimming weir or overflow gutter or channel at high water level; and
 - (C) have means of egress provided in the form of ladders, steps in the floor of the pool or a ramp;
 - (ii) be capable of being completely emptied and any discharge or overflow and pool backwash filter must be connected to the sewer drainage system;
 - (iii) be watertight with smooth surfaces of non-absorbent, non-slip material, light in colour and with rounded corners to facilitate cleaning;
 - (iv) have surrounding concourses graded away from the pool.
- (d) Pools in or forming part of buildings other than Class 1 buildings-
- (i) where in any part of the pool the depth is less than 1500 mm, the floor grade must not exceed a slope of 1 in 20;
 - (ii) permanent signs must be displayed on the side of the pool (or adjacent concourse for flush concourse waterline pools), showing the depth at 300 mm change intervals for the length of the pool and the depth at the deep and shallow ends.

- (e) Electrical installations and equipment associated with swimming pools must comply with AS 3000 SAA Wiring Rules (in particular Section 6) and be carried out by a licensed electrician.

Add ACT G1.103 as follows:

ACT G1.103 Awnings and projections

Every awning, projection or the like, attached to, or supported from a building other than a Class 1 or 10 building must-

- (a) comply with Part B1;
- (b) have all supporting members constructed of *non-combustible* material or be lined on the underside with *non-combustible* material;
- (c) if it has a roof, be covered with *non-combustible* or fire-retardant material which is impervious to moisture;
- (d) if projecting over a boundary onto or over unleased land-
 - (i) in no part be less than 2.7 m above finished pavement or finished ground level; and
 - (ii) be set back not less than 750 mm from any kerb or the edge of any place accessible to vehicles; and
 - (iii) where the height to the underside of the awning is at least 3.8 m above finished pavement or ground level, the awning may align with, but not project beyond, the kerb or the edge of any place accessible to vehicles; and
- (e) not have any signs or other attachments projecting lower than 2.3 m above the finished pavement or ground surface.

PART G2 HEATING APPLIANCES, FIREPLACES, CHIMNEYS AND FLUES

Add ACT G2.2(d) and (e) as follows:

ACT G2.2 Installation of appliances

- (d) An industrial fuel-fired appliance: AS 1375;
- (e) Storage tanks and other associated fittings: AS 1692.

Add ACT G2.3(e) as follows:

ACT G2.3 Open fireplaces deemed-to-comply

- (e) in the case of a solid-fuel burning appliance in which the fuel burning compartment is not enclosed-
 - (i) a flue constructed of cast iron, cellulose fibre reinforced cement not less than 9.5 mm thick, galvanised steel not less than 1.2 mm thick or such other material of at least equivalent strength and durability, installed in accordance with Section 6 of AS 1691, as though it is a flue connected to an oil heating appliance;
 - (ii) the heat producing appliance installed to allow ample air circulation and ventilation;
 - (iii) footings and floor structures strengthened as necessary for the imposed load of the fireplace so as to maintain structural adequacy; and
 - (iv) roof penetrations for flues treated in such a manner so as to not impair the structural adequacy of the roof and to be weatherproof.

Footnote:**OTHER LEGISLATION AFFECTING BUILDINGS**

In addition to the requirements of the ACT Building Act 1972 and the ACT Building Code, administered by ACT Building, Electrical and Plumbing Control, (BEPCON) builders and designers should be aware of other legislation which contains building requirements.

The following is a list of some of the other relevant legislation:

1. Building Control Legislation

Public Health (General Sanitation) Regulations (ACT Health)

2. Fire Safety Regulations

Dangerous Goods Regulations (Department of Urban Services (DUS))

Fire Brigade Act 1957 (ACT Fire Brigade)

Fire Brigade Regulations (ACT Fire Brigade)

3. Environmental Control and Emission Standards

Air Pollution Act 1984 (DUS)

Noise Control Act 1988 (DUS)

Water Pollution Act 1984 (DUS)

4. Licensed Premises

Food Act 1992 (ACT Health)

Liquor Act 1975 (Attorney-General's Department (AGD))

Licensing Standards Manual (AGD)

Public Health (Boarding Houses) Regulations (ACT Health)

Public Health (Meat) Regulations (ACT Health)

Public Health (Sale of Food and Drugs) Regulations (ACT Health)

5. Occupational Health and Safety

ACT Demolition Code of Practice (Chief Minister's Department (CMD))

Occupational Health and Safety Act 1989 (CMD)

6. Public Housing

Housing Assistance Act 1987 (ACT Housing Trust)

7. Scaffolding and Temporary Works

Scaffolding and Lifts Regulations (CMD)

8. Urban Design Standards, Land Title and Tenure

ACT (Planning and Land Management) Act 1988 (National Capital Planning Authority (NCPA))

Buildings (Design and Siting) Act 1964 (DUS)

City Area Leases Act 1936 (For leases before the Land Act commenced) (DUS)

Common Boundaries Act 1981 (DUS)

Land (Planning and Environment) Act 1991 (DUS)

Leases (Special Purposes) Act 1925 (For leases before the Land Act commenced) (DUS)

National Land Ordinance 1989 (NCPA)

Unit Titles Act 1970 (DUS)

9. Utility Services and Urban Infrastructure

- Canberra Sewerage and Water Supply Regulations (BEPCON)
- Electricity Act 1971 (BEPCON)
- Gas Act 1992 (AGL, Dangerous Goods Inspectorate)
- Protection of Lands Act 1937 (DUS)
- Roads and Public Places Act 1937 (DUS)

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APPENDIX

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NEW SOUTH WALES

INTRODUCTION

The NSW Building Code technical package consists of-

- (i) the Building Code of Australia (BCA) 1996 Volume One and Volume Two; and
- (ii) the New South Wales BCA Appendix which contains variations to the requirements of the BCA and additional provisions applicable in New South Wales.

The technical package is accompanied by an administrative package as contained in the Local Government (Approvals) Regulation, 1993.

NEW SOUTH WALES - BCA APPENDIX

CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application in New South Wales as follows:

A - GENERAL PROVISIONS

- NSW A1.1 Definitions
- NSW Specification A1.3
Standards Adopted by Reference.

B - STRUCTURE

- NSW B1.3 Materials and forms of construction

C - FIRE RESISTANCE

- NSW C2.3 Large isolated buildings
- NSW C3.2 Protection of openings in external walls
- NSW C3.11 Bounding construction: Class 2, 3, 4 and 9 buildings
- NSW Specification C1.10
Fire Hazard Properties

D - ACCESS AND EGRESS

- NSW D1.2 Number of exits required
- NSW D1.6 Dimensions of exits
- NSW D1.10 Discharge from exits
- NSW Table D1.13
Area per person according to use
- NSW D2.1 Application of Part
- NSW D2.13 Treads and risers
- NSW D2.15 Thresholds
- NSW D2.16 Balustrades
- NSW D2.19 Doorways and doors
- NSW D2.21 Operation of latch
- NSW D2.101 Doors in path of travel in a place of public entertainment

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Contents continued**E - SERVICES AND EQUIPMENT**

- NSW Specification E1.5
Fire Sprinkler Systems
- NSW Table E2.2b
Specific provisions
- NSW Specification E2.2a
Smoke Detection and Alarm Systems
- NSW E4.6 Direction signs

F- HEALTH AND AMENITY

- NSW F2.7 Warm water installations
- NSW F4.5 Ventilation of rooms

G - ANCILLARY PROVISIONS

- NSW G1.101 Provision for cleaning of windows

H - SPECIAL USE BUILDINGS**NSW Part H101 PLACES OF PUBLIC ENTERTAINMENT OTHER THAN TEMPORARY STRUCTURES AND DRIVE-IN THEATRES**

- NSW H101.1 Application of Part
- NSW H101.2 Fire separation
- NSW H101.3 Foyer space
- NSW H101.4 Sprinkler systems for common foyers
- NSW H101.5 Conventional stages
- NSW H101.6 Non-conventional stages
- NSW H101.7 Flying scenery
- NSW H101.8 Load notice
- NSW H101.9 Guarding of machinery
- NSW H101.10 Safety curtains
- NSW H101.11 Seating in rows
- NSW H101.12 Continental seating
- NSW H101.13 Provision of guardrails
- NSW H101.14 Guardrails

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Contents continued**NSW Part H101 continued**

- NSW H101.15 Dressing rooms
- NSW H101.16 Storerooms
- NSW H101.17 Projection suites
- NSW H101.18 Basement storeys
- NSW H101.19 Electric mains installation
- NSW H101.20 Lighting
- NSW H101.22 Smoke control systems for small stages
- NSW H101.23 Solid fuel burning stoves and open fire places
- NSW H101.24 Fuel gas cylinders

NSW Part H102 TEMPORARY STRUCTURES

- NSW H102.1 Application of Part
- NSW H102.2 Exits - Exclusions
- NSW H102.3 Location of exits
- NSW H102.4 Exits to be provided
- NSW H102.5 Vertical clearances for exits
- NSW H102.6 Curtains across exits
- NSW H102.7 Curtains and blinds
- NSW H102.8 Fabrics
- NSW H102.9 Guardrails
- NSW H102.10 Seating
- NSW H102.11 Sanitary accommodation
- NSW H102.12 Projection suites
- NSW H102.13 Fireplaces and heating
- NSW H102.14 Electrical services
- NSW H102.15 Artificial lighting
- NSW H102.16 Exit signs
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NSW Part H103 DRIVE-IN THEATRES

- NSW H103.1 Application of Part
- NSW H103.2 Speaker standards
- NSW H103.4 Vehicular entrances
- NSW H103.5 Lighting
- NSW H103.3 Electrical services

I - MAINTENANCE

- NSW I1.2 Essential services
- NSW I1.3 Mechanical ventilation and warm water systems

Amdt 0

SECTION A GENERAL PROVISIONS

PART A1 INTERPRETATION

NSW A1.1 Definitions

Insert definition for *aisle* as follows:

Aisle means a walkway at the end of *rows* of seating, not being *continental seating*, leading to a cross-over or to an egress doorway.

Insert definition for *auditorium* as follows:

Auditorium means such part of a *place of public entertainment* as is designed to accommodate the audience to an entertainment or public meeting.

Insert definition of *continental seating* as follows:

Continental seating means *rows* of seating in which the *rows* extend the full width of an *auditorium* without intervening *aisles*.

Insert definition of *cross-over* as follows:

Cross-over in relation to a *place of public entertainment* or *temporary structure*, means a walkway between *aisles* or between an *aisle* and an egress doorway.

Vary definition for *early childhood centre* as follows:

Early childhood centre means a *preschool*, kindergarten or child-minding centre for the care or training of more than 5 children.

Insert definition of *film* as follows:

Film means a cinematograph *film* of a size of 35 mm or greater.

Insert definition of *flying scenery* as follows:

Flying scenery means scenery of a kind that is lifted above the *stage* floor by means of lines run from a *grid*.

Insert definition of *grid* as follows:

Grid means a framework from which lines are run for the purpose of lifting *flying scenery* above the *stage* floor.

Insert definition of *minimum lateral clearance* as follows:

Minimum lateral clearance means a permanently unobstructed space having a height above floor level of not less than 2000 mm and a width of not less than the specified measurement.

Insert definition of *place of public entertainment* as follows:

Place of public entertainment means-

- (a) a drive-in theatre; or
- (b) an open-air theatre; or
- (c) a theatre or public hall; or
- (d) licensed premises providing entertainment.

Insert definition of *projection suite* as follows:

Projection suite means such part of a *place of public entertainment* as is designed to accommodate apparatus used for projecting *films*.

Insert definition of *public entertainment* as follows:

Public entertainment means entertainment to which admission may ordinarily be gained by members of the public on payment of money or other consideration.

Insert definition of *row* as follows:

Row means a *row* of seating-

- (a) between a wall or other barrier and an *aisle*; or
- (b) between 2 *aisles*.

Delete definition of *stage* and insert NSW definition of *stage* as follows:

Stage means such part of a *place of public entertainment* as is used by performers or speakers in an entertainment or public meeting.

Insert definition of *temporary structure* as follows:

Temporary structure means-

- (a) a booth, tent or other temporary enclosure, whether or not a part of the booth, tent or enclosure is permanent; or
- (b) a mobile structure.

**NSW Specification A1.3
STANDARDS ADOPTED BY REFERENCE**

In Table 1, insert additional reference as follows:

NSW Table 1: SCHEDULE OF REFERENCED DOCUMENTS			
No.	Date	Title	BCA Clause
SSL		Appraisal Specification FAS102	NSW H101.7.1

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SECTION B STRUCTURE

Delete B1.3 (i)(ii)(D) and insert NSW B1.3 (i)(ii)(D) as follows:

NSW B1.3 Materials and forms of construction

- (i) protection from termites:
- (ii) (D) the need to maintain and inspect the system on a regular basis.

SECTION C FIRE RESISTANCE

PART C2 COMPARTMENTATION AND SEPARATION

Delete C2.3 (a)(i)(A),(B),(C) and (D) and substitute NSW C2.3 (a)(i) as follows:

NSW C2.3 Large isolated buildings

- (a) the building does not exceed 18 000 m² in *floor area* nor exceed 108 000 m³ in volume, if -
 - (i) the building is Class 7 or 8, it contains not more than 2 *storeys* and is provided with *open space* complying with C2.4(a) not less than 18 m wide around the building; or

PART C3 PROTECTION OF OPENINGS

Delete C3.2(a) as follows:

NSW C3.2 Protection of openings in external walls

(a) (deleted);

NSW C3.11 Bounding construction: Class 2, 3, 4 and 9 buildings

Delete C3.11 (d)(ii) and substitute NSW C3.11(d)(ii) as follows:

(d) Protection for a doorway -

- (ii) in a Class 3 building used as a *residential aged care building*, may be a self-closing tight fitting, solid core door, not less than 35 mm thick, provided the building is protected with a sprinkler system complying with Specification E1.5.

Insert NSW C3.11(h) as follows:

- (h) In a Class 9b building used as a *place of public entertainment*, openings in construction *required* to separate one space from another must be protected in accordance with C3.4.

NSW Specification C1.10 FIRE HAZARD PROPERTIES

Delete Clause 4(d) and insert new clause as follows:

4. Class 2, 3 and 9 buildings

- (d) in a Class 9b building used as a *place of public entertainment*, and-
 - (i) it is used to cover closed back upholstered seats in any part available to the public where-
 - (A) smoking is permitted; or
 - (B) flame is exposed in connection with the preparation of meals, have a *Spread-of-Flame Index* of not more than 6 and a *Smoke-Developed Index* of not more than 5;

- (ii) it is used to form a cinematograph screen, have-
 - (A) a *Flammability Index* no greater than 12, a *Spread-of-Flame Index* of 0 and a *Smoke-Developed Index* of not more than 7; and
 - (B) such screen must also have a supporting frame of metal construction;
- (iii) it is used as a curtain, blind or similar decor in any part available to the public, have a *Flammability Index* no greater than 6; and
- (iv) it is used as a cinematograph screen, curtain, blind or similar decor in any part available to the public, have a label affixed to a representative sample of each different material indicating, in legible characters-
 - (A) name of manufacturer;
 - (B) trade name and description of materials composition;
 - (C) retardant treatment (if any), name of applicator and date of application;
 - (D) AS 1530 Parts 2 and/or 3 test number and its *Flammability*, *Spread-of-Flame* and *Smoke Developed Indices*; and
 - (E) approved methods of cleaning.

Add Clause 6 as follows:

6. Fire-retardant coatings not acceptable

- (a) Fire-retardant coatings must not be used in order to make a material comply with a *required Flammability Index*, *Spread-of-Flame Index* or *Smoke-Developed Index*, except in respect to a material covered by clause 4(d).
- (b) In the case of a material covered by clause 4(d), any fire-retardant coating must be-
 - (i) certified by its manufacturer or distributor as approved for use with the fabric to achieve the *required indices*; and
 - (ii) certified by its manufacturer or distributor to retain its retardancy effect after a minimum of 5 commercial dry cleaning or laundering operations carried out in accordance with AS 2001.5.4-1987, Procedure 7A, using ECE reference detergent; and

- (iii) certified by the applicator as having been carried out in accordance with the manufacturer's specification.

SECTION D ACCESS AND EGRESS

PART D1 PROVISION FOR ESCAPE

Add D1.2(d)(vi) as follows:

NSW D1.2 Number of exits required

- (d) (vi) any *storey* or *mezzanine* within an *auditorium* in a *place of public entertainment*.

Insert NSW D1.6(f)(v), and (h) as follows:

NSW D1.6 Dimensions of exits

- (f) (v) in a Class 9b building used as a *place of public entertainment*-
- (A) in parts of the building used by the public, the width of the *required exit* or path of travel, and the unobstructed width of each doorway must not be less than 1 m and not more than 3 m; and
 - (B) in other parts of the building, doorways must comply with D1.6(f).
- (h) in a Class 9b building used as a *place of public entertainment*-
- (i) the aggregate width must be not less than 2 m plus 500 mm for every 50 persons or part in excess of 200; and
 - (ii) D1.6(b), (c) and (d) do not apply; and
 - (iii) where one or more paths of travel merge, the width of the combined path of travel must be not less than the sum of the *required* widths of those paths of travel; and
 - (iv) the *required* widths of the paths of travel connecting the *exits* from the building to a public road or *open space* must comply with (iii).

Delete D1.10(f) and insert NSW D1.10(f) as follows:

NSW D1.10 Discharge from exits

- (f) In a Class 9b building used as a *place of public entertainment*, at least half of the *required* number of *exits* from each *storey* or *mezzanine*, and at least half of the aggregate width of such *exits* must discharge otherwise than through the main entrance, or the area immediately adjacent to the main entrance of the building.

Vary Table D1.13 as follows:

NSW Table D1.13 AREA PER PERSON ACCORDING TO USE	
Type of use	m ² per person
Delete "Theatres and public halls" and insert the following:	
Places of public entertainment -	
other than auditorium	1.2
Auditorium - standing area	0.5
removable seating	1.0
fixed seating	count seats
bench seating	450 mm/person

PART D2 CONSTRUCTION OF EXITS

Delete D2.1 and insert NSW D2.1 as follows:

NSW D2.1 Application of Part

- (a) Except for D2.13 and D2.16 the deemed-to-satisfy provisions of this Part do not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part.
- (b) In a Class 9b building used as a *place of public entertainment*-
 - (i) Clauses NSW D2.13(b)(vii)(B), (b)(viii), (b)(x), (b)(xi), NSW D2.15(b), NSW D2.16(g)(v), and NSW D2.19(e) apply to only those parts of the building used by the public; and
 - (ii) the general requirements of Part D2 apply to all other parts of the building.

Delete D2.13(g), and insert NSW D2.13(g), (j), (k) and (l) as follows:

NSW D2.13 Treads and risers

- (g) in a Class 9b building -
 - (i) not more than 36 risers in consecutive flights without a change in direction of at least 30°; or
 - (ii) in a *place of public entertainment*, a landing with a length of at least 1500 mm may be provided instead of a change of direction; and
- (j) conspicuous edges to the treads of steps in a Class 9b building used as a *place of public entertainment*; and
- (k) in a Class 9b building used as a *place of public entertainment*, not more than one helical stairway serving as a *required exit* and that stairway must-
 - (i) have a width of not less than 1500 mm;
 - (ii) be of constant radius; and
 - (iii) be constructed so that each tread, when measured 500 mm in from its narrow end, has a width of at least 280 mm; and
- (l) in a Class 9b building used as a *place of public entertainment*, in a curved stairway serving as a *required exit* - an internal radius of not less than twice the width of the stair.

Renumber D2.15(b) to (c) and insert NSW D2.15(b) as follows:

NSW D2.15 Thresholds

- (b) in a Class 9b building used as a *place of public entertainment*, the door sill of a doorway opening to a road, *open space* or external balcony is not more than 50 mm above the finished floor level to which the doorway opens; or
- (c) in other cases-
 - (i) the doorway opens to a road, *open space* or external balcony; and
 - (ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.

Delete D2.16(f)(iv) and insert NSW D2.16(f)(v) as follows:

NSW D2.16 Balustrades

(f) (iv) deleted

Note: See	NSW H101.13	Provision of Guardrails
	NSW H101.14	Guardrails
	NSW H102.9	Guardrails

- (v) For a balustrade in a Class 9b building used as a *place of public entertainment*, the height above the nosings of the stair treads and the floors of ramps, and the floor of any access path, balcony, landing or the like, is not less than-
- (A) 1 m when provided inside the building; and
 - (B) 1200 mm when provided externally to the building.

Insert NSW D2.19(e) as follows:

NSW D2.19 Doorways and doors

- (e) in a Class 9b building used as a *place of public entertainment*-
- (i) must not be fitted with a collapsible gate, accordion door, turnstile or rigid barrier; and
 - (ii) if fitted with a door, must be-
 - (A) a swing door which opens in the direction of egress; and
 - (B) doors hung in two folds where the unobstructed width of the doorway is more than 1 m; and
 - (iii) a doorway or opening within sight of the audience but not intended for egress must have a notice displayed clearly indicating its purpose and such a notice must not be internally illuminated; and
 - (iv) notwithstanding (c), a sliding door may be fitted where-
 - (A) it leads directly to a road or *open space* and forms a main entrance; and
 - (B) it is capable of swinging in the direction of egress when pressure is applied to the inside face of the door; and

- (C) the door is provided with signage that clearly indicates to persons seeking egress, the potential for swinging the door open in an emergency.

Add NSW D2.21(f) as follows:

NSW D2.21 Operation of latch

- (f) it serves a Class 9b building used as a *place of public entertainment* where-
- (i) the single device operating the latch or bolts on doors used by the public must be a panic bar if those doors are to be secured; or
 - (ii) an *exit* door or gate used by the public as the main entrance may be fitted only with key-operated fastenings, the tongues of which must be locked in the retracted position whenever the building is occupied by the public so the door or gate can yield to pressure from within.

Add NSW D2.101 as follows:

NSW D2.101 Doors in path of travel in a place of public entertainment

In a Class 9b building used as a *place of public entertainment*-

- (a) a doorway in a path of travel must comply with NSW D2.19(e); and
- (b) a door or gate which opens onto a path of travel used by the public must-
 - (i) close in the direction of egress;
 - (ii) be fitted with an *automatic self-closing* device; and
 - (iii) be installed so as not to interfere with any egress door.

SECTION E SERVICES AND EQUIPMENT

PART E1 FIRE FIGHTING EQUIPMENT

NSW Specification E1.5 FIRE SPRINKLER SYSTEMS

Delete Clause 7(a) and insert new clause as follows:

7. Water supply

- (a) for a building greater than 25 m in *effective height*, Grade 1, except that a secondary water supply storage capacity of 25 000 litres may be used if-
 - (i) the storage tank is located at the top most *storey* of the building; and
 - (ii) the building occupancy is classified as no more hazardous than Ordinary hazard 2 (OH2) under AS 2118.1; and
 - (iii) an operational fire service is available to attend a building fire; and

PART E2 SMOKE HAZARD MANAGEMENT

Delete Table E2.2b Class 9b Assembly buildings and substitute NSW Table E2.2b Class 9b buildings as follows:

**NSW Table E2.2b
Class 9b buildings**

CLASS 9b - ASSEMBLY BUILDINGS

The following provisions apply to all Class 9b *assembly buildings*:

(a) Automatic shutdown:

A building or part of a building used as an *assembly building* must be provided with *automatic* shutdown of any air-handling system (other than non-ducted individual room units with a capacity not more than 1000 l/s and miscellaneous exhaust air systems installed in accordance with Section 7 of AS 1668.1) which does not form part of the smoke hazard management system, on the activation of -

- (i) smoke detectors installed complying with Specification E2.2a; and
- (ii) any other installed fire detection and alarm system, including a sprinkler system complying with Specification E1.5;

Continued

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NSW Table E2.2b continued	
<p>(b) Basements: A basement not counted in the <i>rise in storeys</i> in accordance with C1.2, less than 2000 m² used as an <i>assembly building</i> or part of an <i>assembly building</i> containing an <i>auditorium</i> or other public area, must be equipped with -</p> <ul style="list-style-type: none"> (i) an <i>automatic</i> smoke detection system in accordance with Specification E2.2a; or (ii) an <i>automatic</i> zone smoke control system in accordance with AS 1668.1 if the basement has more than one <i>fire compartment</i>, or if the basement forms part of a multi <i>fire-compartmented</i> building served by the zone smoke control system; or (iii) a sprinkler system complying with Specification E1.5. <p>(c) Stages and backstages: A building or part of a building used as an <i>assembly building</i> which has a <i>stage</i> -</p> <ul style="list-style-type: none"> (i) with a <i>floor area</i> of more than 50 m² and not more than 150 m² must, over the <i>stage</i>, be provided with - <ul style="list-style-type: none"> (A) an <i>automatic</i> smoke exhaust system complying with Specification E2.2b (including Figure 2.1); or (B) roof mounted <i>automatic smoke-and-heat vents</i> complying with NSW H101.22, in a single <i>storey</i> building or the top <i>storey</i> of a multi-storey building; or (ii) with a <i>floor area</i> of more than 150 m² must, over the <i>stage</i>, be provided with an <i>automatic</i> smoke exhaust system complying with Specification E2.2b (including Figure 2.1); or (iii) equipped with means of flying scenery must, over the <i>stage</i>, be provided with an automatic smoke exhaust system complying with Specification E2.2b (including Figure 2.1). 	
NIGHT CLUBS, DISCOTHEQUES, AND OTHER LICENSED PREMISES PROVIDING ENTERTAINMENT.	
<p>A building or part of a building being a night club, discotheque, or other licensed premises providing entertainment, must be provided with -</p> <ul style="list-style-type: none"> (a) in an <i>auditorium</i> - <ul style="list-style-type: none"> (i) an <i>automatic</i> smoke exhaust system complying with Specification E2.2b; or (ii) roof mounted <i>automatic smoke-and-heat vents</i> complying with Specification E2.2c, in a single <i>storey</i> building or the top <i>storey</i> of a multi <i>storey</i> building; or (iii) a sprinkler system complying with Specification E1.5 with fast response sprinkler heads; and (b) in all other areas - <ul style="list-style-type: none"> (i) where a building or part of a building has a <i>floor area</i> not more than 2000 m² - <ul style="list-style-type: none"> (A) one of the smoke hazard management measures listed under (a) above; or (B) an <i>automatic</i> smoke detection and alarm system complying with Specification E2.2a; or (ii) where a building or part of a building has a <i>floor area</i> of more than 2000 m², smoke hazard management measures as provided for under 'Other Assembly Buildings' in NSW Table E 2.2(b). <p>Note: Paragraph (a) applies only to an <i>auditorium</i> designed principally to accommodate an audience to an entertainment.</p>	
Continued	

	<p>NSW Table E2.2 continued</p> <p>EXHIBITION HALLS, MUSEUMS AND ART GALLERIES</p> <p>A building or part of a building used as an exhibition hall, museum, art gallery or the like, must be provided with -</p> <ul style="list-style-type: none"> (a) where the <i>floor area</i> is more than 2000 m² and not more than 3500 m² - <ul style="list-style-type: none"> (i) an <i>automatic</i> smoke exhaust system complying with Specification E2.2b; or (ii) roof mounted <i>automatic smoke-and-heat vents</i> complying with Specification E2.2c in a single <i>storey</i> building or the top <i>storey</i> of a <i>multistorey</i> building; or (iii) a sprinkler system complying with Specification E1.5 ; and (b) where the <i>floor area</i> is more than 3500 m² , a sprinkler system complying with Specification E1.5 and- <ul style="list-style-type: none"> (i) an <i>automatic</i> smoke exhaust system complying with Specification E2.2b; or (ii) roof mounted <i>automatic smoke-and-heat vents</i> complying with Specification E2.2c, in a single <i>storey</i> building or the top <i>storey</i> of a <i>multistorey</i> building. <p>OTHER ASSEMBLY BUILDINGS</p> <ul style="list-style-type: none"> (a) Unless otherwise described in (b), in a building or part of a building used as an <i>assembly building</i> not referred to elsewhere in this Table, where the <i>floor area</i> of a <i>fire compartment</i> is more than 2000 m², the <i>fire compartment</i> must be provided with - <ul style="list-style-type: none"> (i) an <i>automatic</i> smoke exhaust system complying with Specification E2.2b; or (ii) roof mounted <i>automatic smoke-and-heat vents</i> complying with Specification E2.2c, in a single <i>storey</i> building or the top <i>storey</i> of a <i>multistorey</i> building; or (iii) if the <i>floor area</i> of the <i>fire compartment</i> is not more than 5000 m² and the building has a <i>rise in storeys</i> of not more than 2- <ul style="list-style-type: none"> (A) an <i>automatic</i> smoke detection and alarm system complying with Specification E2.2a; or (B) a sprinkler system complying with Specification E1.5. (b) The following buildings are exempt from the provisions of (a): <ul style="list-style-type: none"> (i) Sporting complexes, (including sports halls, gymnasiums, <i>swimming pools</i>, ice and roller rinks, and the like) other than indoor sports stadiums with total spectator seating for more than 1000 persons. (ii) Churches and other places used solely for religious worship. <p>Note: Smoke hazard management provisions for an <i>assembly building</i> used for multiple purposes must comply with all the relevant provisions of NSW Table E2.2b according to usage.</p>
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**NSW Specification E2.2a
SMOKE DETECTORS AND ALARM SYSTEMS**

Delete Clause 7(d) as follows:
7. System Monitoring

(d) deleted

PART E4 EMERGENCY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS

Delete E4.6 and insert NSW E4.6 as follows:

NSW E4.6 Direction signs

If an *exit* is not readily apparent to persons occupying or visiting the building, then *exit* signs must be installed-

- (a) in appropriate positions in corridors, hallways, lobbies, foyers, auditoria, and the like, indicating the direction to a *required exit*, and
- (b) in a Class 9b building used as a *place of public entertainment* - in any external egress path to a street where the *exit* does not open directly onto a street.

SECTION F HEALTH AND AMENITY

PART F2 SANITARY AND OTHER FACILITIES

Delete F2.7:

NSW F2.7 Warm water installations

(deleted).

PART F4 LIGHT AND VENTILATION

Delete F4.5(b) and insert NSW F4.5(b) as follows:

NSW F4.5 Ventilation of rooms

- (b) a mechanical ventilation or air-conditioning system complying with AS 1668.2.

SECTION G ANCILLARY PROVISIONS

Add NSW G1.101 as follows:

NSW G1.101 Provision for cleaning of windows

- (a) A building must provide for a safe manner of cleaning any *windows* located 3 or more *storeys* above ground level.
- (b) A building satisfies (a) where-
 - (i) the *windows* can be cleaned wholly from within the building; or
 - (ii) provision is made for the cleaning of the *windows* by a method complying with the Construction Safety Act 1912 and regulations made under that Act.

SECTION H SPECIAL USE BUILDINGS

Delete Part H1 and insert NSW Part H101 as follows:

NSW PART H101 PLACES OF PUBLIC ENTERTAINMENT OTHER THAN TEMPORARY STRUCTURES AND DRIVE-IN THEATRES

NSW H101.1 Application of Part

- (a) This Part applies to every building used for public entertainment and for public meetings as described in the Local Government Act 1993.
- (b) A reference to a theatre, stage or public hall in the BCA is a reference to a *place of public entertainment* as defined in NSW A1.1.

NSW H101.2 Fire separation

If a *place of public entertainment* forms part only of a building, then-

- (a) the whole of the *place of public entertainment*, or
- (b) the part containing the *stage*, *backstage* area and *auditorium*,

must be separated from the other parts of the building by construction having an FRL of not less than 60/60/60.

NSW H101.3 Foyer space

Where a *place of public entertainment* is used principally for the purpose of-

- (a) exhibiting films; or
- (b) conducting live *stage* productions,

foyer space (excluding stairways and concession areas) must be provided on the basis of at least 0.25 m² for each person that the *auditorium* accommodates.

NSW H101.4 Sprinkler systems for common foyers

If any foyer in a *place of public entertainment*-

- (a) serves more than 2 *auditoriums*; and
- (b) is not separated from any other foyer by construction having an FRL of not less than 60/60/60, a sprinkler system complying with Specification E1.5 must be installed throughout the *storey* containing the foyer and throughout each *storey* in the building below that *storey*.

NSW H101.5 Conventional stages

This clause applies to a conventional *stage*, that is, a *stage* which is separated from the *auditorium* by a proscenium wall incorporating a proscenium opening.

NSW H101.5.1 Extent of stage area

If a room or area is not separated from the remainder of a conventional *stage* by construction having an FRL of not less than 60/60/60, the room or area is, for the purposes of this Part, to be taken to form part of the *stage*.

NSW H101.5.2 Small stages

A *stage* which is more than 50 m² but not more than 150 m² in area must have 2 or more means of egress from the *stage* and *backstage* area provided otherwise than through the proscenium wall.

NSW H101.5.3 Large stages

A *stage* which is more than 150 m² in area-

- (a) must have installed directly above the *stage* a suitable sprinkler system complying with Specification E1.5; and
- (b) must have the proscenium opening protected by a safety curtain that complies with NSW H101.10; and

- (c) must have a line of open drenchers or open sprinklers provided above the proscenium opening on the *stage* side and in such a position as to be able to discharge over the inside face of the safety curtain; and
- (d) must have 2 or more means of egress from the *stage* and *backstage* area provided otherwise than through the proscenium wall.

NSW H101.5.4 Fire separation of stages

A *stage* which is more than 50 m² in area, and all areas below such a *stage*, must (with the exception of the proscenium opening) be separated from the *backstage* and the remainder of the building by construction having an FRL of not less than 60/60/60.

NSW H101.6 Non-conventional stages

This clause applies to a *stage* that is not a conventional *stage* within the meaning of NSW H101.5.

NSW H101.6.1 Small stages

A *stage* which is more than 50 m² but not more than 150 m² in area must have at least 2 means of egress from the *backstage* area.

NSW H101.6.2 Large stages

A *stage* which is more than 150 m² in area must have at least 2 means of egress from the *backstage* area.

NSW H101.7 Flying scenery

Where there is a *grid* or other means of *flying scenery* over-

- (a) a conventional *stage* or non-conventional *stage*-
 - (i) the *stage* must be provided with an sprinkler system complying with Specification E1.5; and
 - (ii) a fly gallery, bridge *grid*, rigging loft, tie gallery or electric light perch must-
 - (A) comply with AS 1657; and
 - (B) be of *non-combustible* construction;
 - (iii) a fly gallery must be provided with at least 2 means of egress, one on each side of the *stage*;
 - (iv) a *grid* or rigging loft must be provided with at least 2 means of egress;

- (v) if exposed steel is used in the construction of a roof, fly or tie gallery, the roof, fly or tie gallery must be so designed that, in the event of its structural failure due to fire, the wall structure of the building will not be affected.
- (vi) structural steel supporting the *stage* tower must be enclosed by masonry or concrete and have an FRL of not less than 120/120/120; and
- (b) in the case of a conventional *stage*, the following additional requirements apply:
 - (i) The proscenium wall must-
 - (A) have an FRL or not less than 120/120/120; and
 - (B) have the proscenium opening protected by a rigid safety curtain in accordance with NSW H101.10.1;
 - (ii) the walls forming the *stage* area, and the area beneath the *stage*, must be constructed of masonry or concrete and have an FRL of not less than 120/120/120.

NSW H101.8 Load notice

A notice indicating the actual distributed and concentrated load for which the *stage* floor has been designed must be conspicuously and permanently displayed in a position adjacent to the *stage* floor.

This notice must be in legible letters and figures-

- (a) at least 50 mm high; and
- (b) on a contrasting background.

NSW H101.9 Guarding of machinery

Machinery and associated equipment in the *stage* area which have moving parts must be equipped with suitable guards where necessary.

NSW H101.9.1 Electric motors

An electric motor, together with any associated equipment having moving parts, that is used for the operation of curtains and maskings in the *stage* area must be constructed, or fitted with guards, so as to prevent the curtains and maskings from coming into contact with it.

NSW H101.10 Safety curtains

A safety curtain *required* by NSW H101.5.3 must-

- (a) be made of *non-combustible* material; and
- (b) be so fitted that, when it is closed, it forms an efficient smoke seal between the *stage* and the *auditorium*; and
- (c) be capable of withstanding a pressure differential of 0.5 kPa over its entire surface area; and
- (d) be run on steel guides located on each side of the proscenium opening; and
- (e) remain engaged in its guides if the guides, together with their fittings and attachments and that part of the curtain engaged in the guides, are subjected to a pressure differential of 1 kPa; and
- (f) be of sufficiently robust construction to withstand damage by scenery, *stage* properties and falling debris; and
- (g) be capable of closing the proscenium opening within 30 seconds, either by gravity slide or by motor assisted mechanisms; and
- (h) have manual controls, located on each side of the *stage*, for the closing of the curtains; and
- (i) have a notice displayed adjacent to the operating controls, in clear and legible letters and symbols of adequate size, indicating its use and operation; and
- (j) when operated, actuate a distinctive warning alarm audible to persons on the *stage* and must not be reliant for its operation solely on the primary electricity supply; and
- (k) have the words "Safety Curtain" exhibited on the curtain in clear and legible letters of adequate size to enable them to be read from all parts of the *auditorium*.

NSW H101.10.1 Safety curtains - Additional requirements

A rigid safety curtain *required* by NSW H101.7 must comply with the requirements of NSW H101.10 and it must-

- (a) be vertically hung from steel cables;
- (b) be framed with structural steel that complies with AS 1250;
- (c) be sheeted and finished on both faces with sheet steel or other *non-combustible* material of such gauge, and so fastened to its frame, as to ensure that its frame is capable of withstanding distortion arising from heat; and

- (d) when closed, overlap the proscenium opening by not less than 300 mm at each side and by not less than 600 mm at the top.

NSW H101.11 Seating in rows

This clause does not apply to *continental seating* or seating at tables.

NSW H101.11.1 Number of seats

Subject to NSW H101.11.5, where seating is arranged in *rows*, the maximum of seats in each *row* must not exceed-

- (a) 8 where there is an *aisle* at one end only of the *row*; or
 (b) 16 where there are *aisles* on both ends of the *row*.

NSW H101.11.2 Chairs used for seating

Chairs used for seating must-

- (a) where they have arms, be at least 500 mm from centre to centre; and
 (b) where they do not have arms, be at least 450 mm from centre to centre; and
 (c) have a *minimum lateral clearance* of at least 300 mm between-
 (i) the front of each chair and the back of the chair in front; or
 (ii) if a guardrail is provided in front of the chairs, between the front of each chair and the guardrail; and
 (d) have a distance of at least 950 mm between the back of each chair and the back of the chair in front.

NSW H101.11.3 Chairs in auditoriums - Level floors

Chairs in an *auditorium* that has a level floor must be-

- (a) securely fastened to the floor; or
 (b) secured together in groups of not less than 4 and not more than 16.

NSW H101.11.4 Chairs in auditoriums - Sloping floors

Chairs in an *auditorium* having a sloping floor, or having stepped or inclined platforms, must be securely fastened to the floor or platform.

NSW H101.11.5 Radiating aisles in seating areas

Where seating is securely fastened to the floor and arranged in rows of concentric circles, semi-circles or segments of circles, with radiating *aisles*-

- (a) the number of seats in each row between 2 *aisles* must not exceed 24; and
- (b) each seat must-
 - (i) have a *minimum lateral clearance* of at least 325 mm between the front of the seat and the back of the seat in front; and
 - (ii) have a distance of at least 975 mm between the back of the seat and the back of the seat in front; and
- (c) the rows may be curved or straight.

NSW H101.11.6 Aisles and cross-overs

Where *aisles* and *cross-overs* are provided-

- (a) each *aisle* must have a width of at least 1000 mm and each *cross-over* must have a width of at least 1500 mm; and
- (b) the floor of each *aisle* must not have a grade of more than 1 in 8 at any part; and
- (c) if there is a step from a row to an *aisle* or from a landing to an *aisle*, the step must not project into the *aisle*.

NSW H101.11.7 Platforms and steps

Where an *aisle* contains platforms or steps-

- (a) the platforms and steps must extend for the full width of the *aisle*; and
- (b) if there are no intervening steps between levels of platforms, the height of the platform riser must not be more than 200 mm; and
- (c) if there are one or more intervening steps between levels of platforms-
 - (i) each riser must be at least 100 mm but not more than 200 mm high; and
 - (ii) each going must be at least 250 mm deep; and
 - (iii) risers and goings must be uniform; and
- (d) goings which are more than 450 mm deep at platform level must not have a grade of more than 1 in 50; and

- (e) at the entrance from the *aisle* to each *row* there must be a clear level floor space, extending the full width of the *aisle*, of at least 300 mm, measured from the back of the *row* in front; and
- (f) any going projecting in front of a seat adjacent to an *aisle* must be protected by a guardrail.

NSW H101.11.8 Stepped platforms

Where stepped platforms without chairs or stepped platforms with bench seats, are used for seating-

- (a) each platform must be at least 700 mm deep; and
- (b) each seating space must be at least 450 mm wide, measured along the front of the platform or bench seat; and
- (c) each seating space must be numbered consecutively ; and
- (d) at the entrance from the *aisle* to each *row* there must be a clear level floor space, extending the full width of the *aisle*, of at least 300 mm, measured from the back of the *row* in front; and
- (e) any going projecting in front of a seat adjacent to an *aisle* must be protected by a guardrail; and
- (f) in the case of stepped platforms with bench seats, there must be at least 300 mm between the back of each seat and the front of the platform behind, or the front of the bench seat behind, whichever is the closer.

NSW H101.12 Continental seating

This Clause applies to *continental seating*.

NSW H101.12.1 Seating to be fastened

Seating must be securely fastened to the floor.

NSW H101.12.2 Maximum seats per row

The number of seats in a *row* must not exceed 120.

NSW H101.12.3 Depths of seating rows

The depth of each *row* of seating (that is, the distance between the back of the *row* in front or, if there is a guardrail in front, between the back of the *row* and the guardrail) must, in respect of a *row* containing number of seats specified in Column 1 of Table H101.12 be not less than the distance specified in Column 2 of that Table in respect of that number of seats.

NSW H101.12.4 Clearance between rows

The *minimum lateral clearance* between each *row* of seating must, in respect of a *row* containing a number of seats specified in Column 1 of Table H101.12 be not less than the clearance specified in Column 3 of that Table in respect of that number of seats.

NSW H101.12.5 Chairs used for seating

Chairs used for seating must comply with NSW H101.11.2 (a) and (b).

NSW H101.12.6 Egress Doorways

Egress doorways through the walls of the *auditorium*-

- (a) must have an aggregate width of at least twice the sum of the clearances specified in Column 3 of Table H101.12 for each *row* of the *auditorium* to be served by those doorways; and
- (b) must be provided at each end of every fifth *row*, excluding the first 2 *rows* and the last 2 *rows* in the *auditorium* if those *rows* each contain no more than 16 seats; and
- (c) must lead-
 - (i) directly to a road or *open space*; or
 - (ii) into a foyer or other area giving access to a road or *open space*; and
- (d) must be provided with *exit* signs if the egress doorways are not sufficiently conspicuous.

NSW H101.12.7 Clear Areas

A clear area:

- (a) must be provided from each end of each *row* to an egress doorway in the wall of the *auditorium*; and
- (b) must have a width of at least-
 - (i) the sum of the clearances specified in Column 3 of Table H101.12 for each such *row*; or
 - (ii) 500 mm, whichever is the greater; and
- (c) if it contains platforms or steps, must comply with NSW H101.11.7 (a), (b), (c), (d) and (f).

NSW H101.12.8 Minimum clear space

At the entrance from a *row* to a clear area, there must be a clear level floor space having a width of at least the clearance specified for the *row* in Column 3 of Table H101.12.

NSW H101.12.9 Doors

A door fitted to the egress doorway in the wall of an *auditorium* must comply with NSW D2.15 and NSW D2.19.

Table H101.12
SPACING OF AUDITORIUM SEATING

Column 1	Column 2	Column 3
Number of seats in <i>Rows</i>	Depth of <i>Rows</i> (mm)	Clearance between <i>Rows</i> (mm)
Not exceeding 16	950	300
17 - 30	975	325
31 - 45	1000	350
46 - 60	1025	375
61 - 75	1050	400
76 - 90	1075	425
91 - 105	1100	450
106 - 120	1125	475

NSW H101.13 Provision of guardrails**NSW H101.13.1 Location**

Guardrails must be provided-

- (a) along the fascia of each balcony or box;
- (b) if there is a stepped floor, along the front edge of each *cross-over*, and
- (c) where NSW H101.13.2 and NSW H101.13.3 apply.

NSW H101.13.2 Fixed back seats

If seats with fixed backs are provided, guardrails that extend for the full width of the seating, must be provided at least 500 mm above the platform unless-

- (a) fixed seat backs of the next lower level project at least 500 mm above the level of the stepped platform; and
- (b) there is only one riser between the platform and the next lower *cross-over*.

NSW H101.13.3 Steps between platforms

If-

- (a) there is more than one intervening step in an *aisle* between levels of platforms, a guardrail must be provided (at a vertical height of at least 660 mm measured above the nosing of each tread and of the upper platform) to the sides of the *aisle* adjacent to those steps; and
- (b) there is more than one intervening step in an *aisle* between levels of platforms and that *aisle* is along a wall, a continuous guardrail must be affixed to that wall at a height of at least 865 mm above the nosing of each tread; and
- (c) the end of a platform or the back of the highest platform does not abut a wall that extends at least 660 mm above the floor level of the platform, a guard rail not less than 660 mm high must be provided-
 - (i) at the ends of the platform, extending from the front of the first riser to the back of the highest platform; and
 - (ii) at the back of the highest platform, extending the full width of the platform; and
- (d) there is an inclined floor, the raised section of which is not bounded by walls at least 660 mm high, a guard rail must be provided that extends around the perimeter of the raised section at a height of at least 660 mm above the inclined floor level; and
- (e) seating at tables is provided on a stepped platform, a guardrail at least 500 mm high must be provided along the front edge of the platform.

NSW H101.14 Guardrails

This clause applies to seating areas.

NSW H101.14.1 Continental seatingWhere a guardrail is provided in front of a *row* of chairs-

- (a) the distance between the back of each chair in that *row*, and the guardrail must be not less than the distance specified in Column 2 of Table H101.12 for the number of chairs in that *row*;
- (b) the *minimum lateral clearance* between the front of each chair in that *row* and the guardrail must be not less than the clearance specified in Column 3 of Table H101.12 for the number of chairs in that *row*.

NSW H101.14.2 Balconies and boxes

A guardrail provided along the fascia of a balcony or box-

- (a) if it is located at the foot of a stepped *aisle*, must have its top surface at least 900 mm above the floor of the balcony or box; and
- (b) if it is not located at the foot of a stepped *aisle*, must have its top surface at least 750 mm above the floor; and
- (c) if it has a ledge more than 70 mm wide, must have the top surface of the ledge sloping downwards towards the floor of the balcony or box at an angle of at least 30 degrees from the horizontal; and
- (d) must have an unperforated kerb or toe guard extending for at least 300 mm above the floor.

NSW H101.14.3 Cross-overs

A guardrail provided along the front edge of a *cross-over* on a stepped floor-

- (a) must be at least 750 mm high; and
- (b) must extend for the full distance between *aisles*, or between a wall and an *aisle*, or for such other distance as considered necessary.

NSW H101.15 Dressing rooms

A dressing room or 2 or more adjoining dressing rooms, having a total *floor area* of more than 50 m², must-

- (a) be separated from other parts of the building by construction having an FRL of not less than 60/60/60;
- (b) have at least 2 means of egress as remote from each other as possible, one of which must discharge-
 - (i) directly to a road or *open space*; or
 - (ii) through a *fire-isolated exit* to a road or *open space*.

NSW H101.16 Storerooms

A storeroom must be separated from other parts of the building by construction having an FRL of not less than 60/60/60.

NSW H101.17 Projection suites

This clause applies to *projection suites*.

NSW H101.17.1 Rooms to be provided

A *projection suite*, in compliance with the staffing requirements of Schedule 2 of the Local Government (Approvals) Regulation 1993 must contain either-

- (a) a projection room and sanitary accommodation comprising at least 1 closet pan and 1 washbasin, where the *projection suite* is continually staffed; or
- (b) a projection room fitted with the following equipment-
 - (i) an *automatic* fire suppression system in accordance with SSL Appraisal Specification FAS 102 or a *sprinkler system* complying with AS 2118; and
 - (ii) a smoke detection system which will-
 - (A) comply with AS 1670 except for the provisions of-
 - (aa) Clause 4.3(f) - location where protection not required; and
 - (bb) Clause 9.4(d) - logbook; and
 - (cc) Clause 9.5 - "Maintenance"; and
 - (B) be connected to a fire station or other approved monitoring service where arrangements are in place to initiate *fire brigade* response; and
 - (C) close down all shutters fitted to projection or observation ports; and
 - (D) activate sufficient general lighting to provide a minimum of 40 lux measured at floor level in any *auditorium* affected; and
 - (E) operate a public address system to automatically announce a suitable message from the management of the premises; and
 - (F) activate an audible alarm to immediately indicate to management the presence of smoke in the projection room.

NSW H101.17.2 Fire separation

A *projection suite* must be separated from all other internal parts of the building in which it is located by construction having an FRL of not less than 60/60/60.

NSW H101.17.3 Concession for protection of some openings

If a projection or observation port is not more than 0.1 m² in area-

- (a) a metal shutter not less than 1.5 mm thick may be fitted thereto instead of the protection *required* under NSW C3.11; and
- (b) any metal shutter or protection system provided must be equipped with a device to permit the closing of the shutter or protection system from easily accessible operating positions adjacent to each egress doorway from the projection room.

NSW H101.18 Basement storeys

Where a *place of public entertainment* includes not more than 2 basement storeys-

- (a) all *required exits* from the basement must be enclosed in *non-combustible* construction, with the exception of the main entry or *exit*; and
- (b) any *auditorium* and other public areas in the basement must be equipped with an air-handling system that complies with AS 1668.2.

NSW H101.18.1 Basement storeys - More than two

If the *place of public entertainment* includes more than 2 basement storeys-

- (a) the construction must be of at least Type B; and
- (b) all *required exits* from the basement must be enclosed in a *fire-resisting shaft* having an FRL as *required* by the relevant Type of construction; and
- (c) the building must be equipped with a sprinkler system complying with Specification E1.5.

NSW H101.19 Electric mains installation.

NSW H101.19.1 Main switchboard

The switchboard containing the main isolation switch must-

- (a) be located in a position that is readily accessible to authorised persons, and to the Fire Brigade in the case of an emergency; and
- (b) be enclosed by construction having an FRL not less than 60/60/60.

NSW H101.19.2 Circuit protection

Protection of a final sub-circuit originating at a switchboard or distribution board must be by means of circuit breakers.

NSW H101.19.3 Separate sub-mains

Where a *place of public entertainment* has its mains supply in common with that of another building or where it is a part of a building-

- (a) the *place of public entertainment* must be served by a separate and independent sub-main from the main switchboard; and
- (b) each such sub-main, the consumer's main and the supply authority's conductors within the building must be protected against fire by means of-
 - (i) mineral-insulated metal-sheathed cables or other cables that provide at least 2 hours' fire protection; or
 - (ii) heavy-duty PVC conduit or metallic pipe, concrete encased in walls or slabs with a minimum of 50 mm cover; or
 - (iii) heavy-duty PVC conduit or metallic pipe, buried at least 500 mm below ground level, for underground cabling.

NSW H101.20 Lighting**NSW H101.20.1 Lighting switches**

- (a) Any switch controlling the lighting system must not be accessible
- (b) Where, during normal use, general lighting may be dimmed or switched off, an override switch to switch on all the general lighting instantaneously must be installed in the *auditorium* in a position accessible to management.

NSW H101.20.2 Lighting levels

Where the lamps utilised in the general lighting are of a type that will not relight immediately after the restoration of the primary electricity supply to those lamps-

- (a) a time delay or other suitable means must be provided to maintain the emergency lighting for a period not less than that necessary to allow the general lighting lamps to restrike; or
- (b) lamps of a type that will provide immediate lighting must be installed and-
 - (i) arranged in such a manner as to ensure visual conditions not inferior to those *required* to be provided by the emergency lighting; and

- (ii) capable of being switched in common with the general lighting and of being controlled also by the override switch *required* by NSW H101.20.1 (b).

NSW H101.20.3 Provision of aisle lighting

Where general lighting is to be either dimmed or extinguished when the public is in attendance and where the floor is stepped or at an inclination greater than 1 in 12, *aisle* lights must be provided to illuminate the length of each *aisle* and the tread of each step therein.

NSW H101.20.4 Aisle lighting power supply

Where an *aisle* light is installed in a seat frame, it must be supplied at a voltage of not more than 32 volts AC or 115 volts DC.

NSW H101.20.5 Aisle lighting alternative power supply

Aisle lighting must be provided with an alternative electricity supply that-

- (a) is capable of being *automatically* energised in the event of failure of the primary lighting electricity supply; and
- (b) complies with the provisions applying to emergency lighting.

NSW H101.21 * * * * *

Note: This clause has intentionally been left blank.

NSW H101.22 Automatic smoke-and-heat vents for stages

An *automatic smoke-and-heat vent* system *required* by NSW Table E2.2b "*Stages and backstage s*" must-

- (a) be capable of *automatic* operation by the inclusion of a heat sensing device designed to activate the system at a temperature of not more than 71°C; and
- (b) be capable of being released manually from positions at each side of the *stage* and of being fully activated from either position; and
- (c) have a notice, prominently displayed at each position referred to in (b), clearly indicating the method of activation; and
- (d) have an openable area of not less than 1/10 of the total area of the *stage*.

NSW H101.23 Solid fuel burning stoves and open fire places.

Solid fuel burning stoves and open fire places must not be installed in premises designed for the purpose of-

- (a) exhibiting films; or
- (b) conducting live theatre productions.

NSW H101.24 Fuel gas cylinders

NSW H101.24.1 General

Fuel gas cylinders must-

- (a) be housed in an enclosure that is located outside the building; and
- (b) comply with Clause B3.2 of the Australian LP Gas Installation Code.

NSW H101.24.2 Fuel gas cylinder enclosures

An enclosure referred to in NSW H101.24.1-

- (a) must be located not less than 3 m from any window, door, vent or other opening; and
- (b) if located 3 m or more from a building must-
 - (i) have a concrete base; and
 - (ii) be constructed from heavy-gauge chain-wire mesh or other suitable material; and
 - (iii) be at least 1.8 m high; and
 - (iv) be so designed as to securely contain the fuel gas cylinders in a single line; and
 - (v) must be so designed as to allow cross ventilation; and
- (c) if located less than 3 m from a building must-
 - (i) have a concrete base; and
 - (ii) have 3 sides constructed from concrete or masonry; and
 - (iii) have a concrete roof; and
 - (iv) be so designed as to securely contain the fuel gas cylinders in a single line; and
 - (v) have a hinged, heavy-gauge chain-wire door capable of being secured against unauthorised entry; and
 - (vi) have its roof at least 600 mm above the uppermost fitting on any fuel gas cylinder housed therein.

NSW PART H102 TEMPORARY STRUCTURES

NSW H102.1 Application of Part

This Part applies to *temporary structures* used as *places of public entertainment* as described in the Local Government Act 1993

NSW H102.2 Exits - Exclusions

In this clause, a reference to an entrance or *exit* does not include a reference to an entrance or *exit* provided for persons or animals performing in a *temporary structure*.

NSW H102.3 Location of exits

Exits must be so provided and arranged as to afford a ready means of egress from all parts of a *temporary structure*.

NSW H102.4 Exits to be provided

Without limiting the generality of NSW H102.3-

- (a) the number of *exits* to be provided for a *temporary structure* designed to accommodate a number of persons specified in Column 1 of Table H102.4 must be not less than the number of *exits* specified in Column 2 of that Table in respect of that number of persons; and
- (b) the aggregate width of the *exits* to a *temporary structure* designed to accommodate a number of persons specified in Column 1 of Table H102.4 must not be less than the width specified in Column 3 of that Table in respect of that number of persons.

NSW H102.5 Vertical clearances for exits

Every part of an entrance or *exit* must provide a minimum unobstructed height of 2000 mm and, where the entrance or *exit* is beneath a stepped seating platform, infilled risers or other approved overhead protection must be provided above the entrance or *exit*.

NSW H102.6 Curtains across exits

A flap or curtain used to cover an *exit* must be so designed that, when it is secured, it will not obstruct or impede egress.

NSW H102.7 Curtain and blinds

Curtains and blinds for use in a *temporary structure* must comply with Clause 4 of NSW Specification C1.10.

Table H102.4 NUMBER OF EXITS AND WIDTHS		
Column 1 Accommodation provided	Column 2 Number of <i>exits</i> required	Column 3 Aggregate width of <i>exits</i>
1-25 persons	*1-2	1 000
26-50 persons	2	1 500
51-75 persons	2	2 000
76-100 persons	2	2 500
100-200 persons	2	3 000
201-400 persons	3	4 500
401-600 persons	4	6 000
601-800 persons	5	7 500
801-1000 persons	5	9 000
over 1000 persons	5 plus one additional <i>exit</i> for each additional 450 persons or part thereof.	9 000 plus 500 mm for each additional persons or part thereof.
* Note: (a) Where only one <i>exit</i> is provided that <i>exit</i> must be at least 1000 mm wide.		
(b) Where 2 <i>exits</i> are provided each must be at least 500 mm wide.		

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NSW H102.8 Fabrics

Fabric that is used in the construction of a *temporary structure* must have-

- (a) a *Flammability index* of not more than 6 where used-
 - (i) within a height of 4 m of the base of the *temporary structure*; or
 - (ii) in an air-supported *temporary structure* without other supporting framework; and
- (b) a *Flammability index* of not more than 25 in every other case.

NSW H102.9 Guardrails

A rigid guardrail must-

- (a) be provided at each end of a stepped or inclined platform, at least 750 mm high above the floor of the platform, and must extend-
 - (i) in the case of a stepped platform, from the front of the first riser; and
 - (ii) in the case of an inclined platform, from the front of the first *row* of seating,
 to the back of the highest platform and along the rear of that platform for its full width; and
- (b) not obstruct any *aisle*, *cross-over* or *exit*.

NSW H102.10 Seating

Seating must be provided in accordance with NSW H101.11.1, NSW H101.11.2, NSW H101.11.3 (b), NSW H101.11.5 (a), (c), NSW H101.11.6 (a) and NSW H101.11.8 (a), (b), (c) and (d).

NSW H102.11 Sanitary accommodation

Suitable sanitary accommodation must be provided at a location convenient to the *temporary structure*.

NSW H102.12 Projection suites

Any *projection suite* must comply with NSW H101.17.2, and NSW H101.17.3.

NSW H102.13 Fireplaces and heating

No fireplace or other form of heating equipment may be installed in a *temporary structure*, without the consent of the approval authority.

NSW H102.14 Electrical services

Electrical services connected to the local supply authority's mains, to a generating plant or to a battery supply must comply with-

- (a) the requirements of the local supply authority; and
- (b) AS 3002; and
- (c) where applicable, AS 3000; and
- (d) NSW H101.19.1(a) and NSW H101.19.3(a).

NSW H102.15 Artificial lighting

Artificial lighting must be provided, and must comply with NSW H101.20.1, and NSW H101.20.2.

NSW H102.15.1 Emergency lighting levels

Emergency lighting must be provided to the areas provided with artificial lighting under NSW H102.15 and must include a sufficient number of lamps to give a minimum illumination of 0.2 lux at floor level.

NSW H102.15.2 Emergency lighting power supply

Where emergency lighting is provided, the capacity of the battery and charging system must be sufficient to provide the illumination *required* by NSW H102.15.1 for-

- (a) half an hour, in respect of a *temporary structure* designed to accommodate not more than 1000 persons; and
- (b) 1 hour, in respect of a *temporary structure* designed to accommodate more than 1000 persons.

NSW H102.16 Exit signs

Exit signs must be provided above all *exits* and in such other locations as may be *required* by NSW E4.6 and must comply with E4.5 and E4.8.

NSW H102.17 Fire-fighting services

- (a) Fire-fighting services and appliances must be so provided as to afford adequate protection and must be so located as the approving authority, on the advice of the Director-General of New South Wales Fire Brigades, may require.
- (b) Where *required* by the approving authority, the fire-fighting services and appliances must comply with Part E1.

NSW PART H103 DRIVE-IN THEATRES**NSW H103.1 Application of Part**

This Part applies to drive-in theatres.

NSW H103.2 Speaker standards

Speaker standards must-

- (a) be placed at a minimum of 5.5 m centres in a line along each parking ramp; and

- (b) be capable of being illuminated throughout any performance so as to be easily distinguishable at all times.

NSW H103.2.1 Lines of speaker standards

Lines of speaker standards along parking ramps must be placed at a distance of not less than 12.2 m apart.

NSW H103.3 Electrical services

The following electrical services must be installed underground-

- (a) the supply authority's conductors within the site and the consumer's mains, unless otherwise approved;
- (b) electrical wiring external to any building on the site; and
- (c) all wiring to the speaker standards.

NSW H103.4 Vehicular entrances

Each public vehicular entrance to or *exit* from the drive-in theatre must be capable of being fully illuminated by flood lights that are so placed and so focussed as not to interfere with the vision of the driver of any motor vehicle.

NSW H103.5 Lighting

- (a) Driveways- Entrance and *exit* driveways, and the perimeter of the holding area, must be capable of being continuously illuminated by lamps capable of producing a minimum illumination of 0.5 lux at ground level.
- (b) Ramp areas- The whole of the ramp area of a drive-in theatre must be capable of being floodlit by means of area flood lights to an illumination of at least 10 lux.

SECTION I MAINTENANCE

PART I1 EQUIPMENT AND SAFETY INSTALLATIONS

Delete I1.1 and insert NSW I1.1 as follows:

NSW I1.1 Essential services

Essential services must be maintained in accordance with the Local Government (Approvals) Regulation, 1993 and Local Government (Orders) Regulation, 1993.

Delete I1.2:

NSW I1.2

Mechanical ventilation and warm water systems

(deleted).

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APPENDIX

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NORTHERN TERRITORY

INTRODUCTION

This Appendix contains variations and additions to the Building Code of Australia (BCA) provisions which are considered necessary for the effective application of the Code in the Northern Territory.

NORTHERN TERRITORY - BCA APPENDIX

CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application in Northern Territory as follows:

A - GENERAL PROVISIONS

NT Specification A1.3
Standards Adopted by Reference

B - STRUCTURE

NT B1.2 Loads
NT B1.3 Materials and forms of construction
NT Specification B1.2
Design of Buildings in Cyclonic Areas

E - SERVICES AND EQUIPMENT

NT E1.5 Sprinklers

H - SPECIAL USE BUILDINGS

NT Part H101 FOOD PREMISES

NT H101.1 Application of Part
NT H101.2 Floors, walls and ceilings
NT H101.3 Pests and contaminants
NT H101.4 Washbasins
NT H101.5 Sinks
NT H101.6 Installation of equipment and fittings
NT H101.7 Drains
NT H101.8 Concealment of pipes
NT H101.9 Storage of materials and equipment
NT H101.10 Separation of work place
NT H101.11 Offensive material and trade waste
NT H101.12 Mechanical ventilation of kitchens

Continued

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Contents continued

NT Part H102 PREMISES TO BE USED FOR ACTIVITIES INVOLVING SKIN PENETRATION

- NT H102.1 Application of Part
- NT H102.2 Sanitary facilities
- NT H102.3 Washbasins

NT Part H103 MORTUARIES

- NT H103.1 Application of Part
- NT H103.2 Layout of mortuary
- NT H103.3 Construction of body preparation room
- NT H103.4 Water supply and sewerage

I - MAINTENANCE

- NT I1.2 Maintenance Requirements

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SECTION A GENERAL PROVISIONS

PART A1 INTERPRETATION

NT Specification A1.3 STANDARDS ADOPTED BY REFERENCE.

Insert in Table 1 of Specification A1.3 the following:

NT Table 1 SCHEDULE OF REFERENCED DOCUMENTS			
No	Date	Title	BCA Clause(s)
AS 1170		Minimum design loads on structures	
Part 2-	1989	Wind loads	NT Spec B1.2
AS 1694	1974	Code of practice for physical barriers used in the protection of buildings against subterranean termites	NT B1.3
AS 1851		Maintenance of fire protection equipment	NT 11.2
Part 1-	1995	Portable fire extinguishers and fire blankets	
Part 2-	1995	Fire hose reels	
Part 3-	1985	Automatic fire sprinkler systems	
Part 4-	1992	Fire hydrant installations	
Part 5-	1981	Automatic smoke/heat venting systems	
Part 6-	1983	Management procedures for maintaining the fire precaution features of air-handling systems	
Part 7-	1984	Fire-resistant doorsets	
Part 8-	1987	Automatic fire detection and alarm systems	
Part 10-	1989	Emergency warning and intercommunication systems	
AS 2057	1989	Protection of buildings from subterranean termites - Chemical treatment of soil for buildings under construction	NT B1.3
AS 2293		Emergency evacuation lighting for buildings	NT 11.2
Part 2	1995	Inspection and maintenance	

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SECTION B STRUCTURE

PART B1 STRUCTURAL PROVISIONS

Delete B1.2(b) and insert NT B1.2(b) as follows:

NT B1.2 Loads

(b) Wind loads: AS 1170.2 and NT Specification B1.2.

Delete B1.3(i) and insert NT B1.3(i) as follows:

NT B1.3 Materials and forms of construction

- (i) Protection from termites: where a *structural member* is subject to attack by subterranean termites-
- (i) (A) in areas south of the Tropic of Capricorn: AS 2057, AS 1694 or AS 3660.1; or
 - (B) in areas north of the Tropic of Capricorn: AS 2057 or AS 1694; and
 - (ii) for the purpose of this provision, a *structural member* consisting entirely of, or a combination of, any of the following materials is considered not to be subject to termite attack:
 - (A) Steel.
 - (B) Concrete.
 - (C) Masonry.
 - (D) Fibre-reinforced cement.
 - (E) Timber in areas south of the Tropic of Capricorn - naturally termite resistant in accordance with Appendix A of AS 3660.1.
 - (F) Timber - preservative treated in accordance with Appendix B of AS 3660.1; and
 - (iii) where a protection method in accordance with AS 3660.1 is used, a durable notice must be permanently fixed to the building in a prominent location, such as a meter box or the like, indicating-
 - (A) the method of protection; and
 - (B) the date of installation of the system; and

- (C) where a chemical barrier is used, its life expectancy as listed on the National Registration Authority label; and
- (D) the installer's or manufacturer's recommendations for the scope and frequency of future inspections for termite activity.

NT Specification B1.2 DESIGN OF BUILDINGS IN CYCLONIC AREAS

1. Scope

This specification contains requirements for the design of buildings in cyclonic areas in addition to the requirements of AS 1170.2.

2. Roof cladding

Test for strength- Metal roofing and its fitments should be capable of withstanding without failure, the test application of 10 000 cycles of working load from zero to that maximum at a rate of 3 Hz, followed by a static load test of 1.8 times the working load.

3. Strengthened area

Where a residential building of Class 2, 3 or 9a, in Region C as defined by AS 1170.2, is designed to be used by the Aged or Infirm it shall incorporate a "strengthened area" for use as shelter during cyclonic conditions and must comply with the following criteria:

("strengthened area" is defined as the strengthening of an area to increase its potential to facilitate debris protection)

- (a) The *floor area* of the "strengthened area" is to be calculated at the rate of 1.2 m² per person normally accommodated within the building.
- (b) The minimum standard of debris protection to be achieved is represented by the following construction:
 - (i) 200 mm masonry block walls reinforced in accordance with the Northern Territory Deemed to Comply Standards (DTC) and core filled every core; or
Timber or steel framed walls clad internally and externally with 18 mm structural ply, screw fixed at 150 mm centres to studs, plates and noggins; and
 - (ii) Ceiling battens strapped to truss bottom chords or ceiling joists in accordance with the DTC Standard; and

18 mm structural ply screw fixed to ceiling battens at 150 mm centres; and

- (iii) All doors serving the strengthened area are to be internal and are to be solid core, inward opening with barrel bolts fitted to the top and bottom; and
- (iv) All *windows* protected with debris screens in accordance with DTC Standards.

SECTION E SERVICES AND EQUIPMENT

PART E1 FIRE-FIGHTING EQUIPMENT

NT E1.5 Sprinklers

Insert provisions for Class 9a buildings in Table E1.5 as follows:

NT Table E1.5 REQUIREMENTS FOR SPRINKLERS	
Occupancy	When sprinklers are required
Class 9a	if more than one <i>storey</i>

SECTION H SPECIAL USE BUILDINGS

Insert NT Part H101 as follows:

NT PART H101 FOOD PREMISES

NT H101.1 Application of Part

- (a) This Part applies to all premises, rooms, compartments, or places used for the sale, preparation, packing, storing, handling, serving, supplying or conveying for sale of food.
- (b) This Part does not apply to tents, buildings or other structures used temporarily for serving meals to the public at any fair, show, race meeting or other public sports, games or amusements.

NT H101.2 Floors, walls and ceilings

- (a) Each floor, wall and ceiling of the premises must have a surface that is-
 - (i) durable, rigid, impervious to water, non-absorbent, non-toxic and smooth enough to be easily cleaned; and
 - (ii) free from cracks, crevices and other defects.
- (b) If the floor is subject to wet cleaning by hosing down or if activities are carried out where liquids are discharged on to the floor, the floor must be graded to trapped floor waste outlets connected to a drainage installation.
- (c) Each wall must be free from skirtings, architraves, picture rails or other ledges that could provide lodgement for dirt.
- (d) All angles between the walls and the floor must be coved to permit easy cleaning.
- (e) All angles between walls and all joints in walls must be sealed.
- (f) All walls and ceilings must be finished in light colour.
- (g) Subclauses (a), (b), (c), (d), (e) and (f) do not apply to areas used only by customers and they do not apply to walls and ceilings in a premises or place-
 - (i) used for the storage or display for sale of food that is wholly enclosed in protective packages;
 - (ii) used for the storage for sale of fruit and vegetables; or
 - (iii) in which all food for sale is completely enclosed and otherwise protected from contamination by processing plants, other appliances, or other means.

NT H101.3 Pests and contaminants

- (a) The exterior of a food premises must be constructed to exclude pests and contaminants.
- (b) Premises which are provided with-
 - (i) fly proof, external *windows* and *self-closing*, fly-proof doors, or
 - (ii) if customers are served outside the premises through an opening, an appliance for the elimination of flies and mechanical ventilation adequate to exhaust air through the opening at a rate of not less than 5 litres per second for each square metre of opening, satisfy (a) as it applies to insects.

NT H101.4 Washbasins

Each premises or place for preparation or storage of food for sale must be provided with not less than one washbasin, supplied with hot and cold water, in or within reasonable proximity of those areas where the nature of the activities performed is such that hands are likely to be a source of contamination of food.

NT H101.5 Sinks

- (a) Each premises must be provided with a double bowl sink or tub of stainless steel supplied with-
 - (i) hot and cold water; and
 - (ii) an integral drainer on at least one side.
- (b) If a sink is installed within 300 mm of a vertical adjacent surface it must be fitted with an integral flashing to that vertical, adjacent surface to a height of not less than 150 mm.

NT H101.6 Installation of equipment and fittings

- (a) Each item of equipment or fitting in a premises which is not capable of being moved easily must be installed-
 - (i) so that the area underneath the item can be easily cleaned; or
 - (ii) on a solid base or plinth constructed of impervious material similar to the flooring material.
- (b) A plinth must be-
 - (i) not less than 75 mm high;
 - (ii) finished to a smooth even surface and rounded at exposed edges to facilitate cleaning;
 - (iii) coved at intersections with floor and walls.

NT H101.7 Drains

A grease trap or an untrapped opening connected directly with a drain or sewer, must not be installed in a room used for preparation, processing, packing or storing of food.

NT H101.8 Concealment of pipes

Where practicable service pipes should be concealed beneath the surface of walls, floors, or ceilings, otherwise pipes are to be fixed clear of the wall, floor, or ceiling, at such distance as to facilitate cleaning.

NT H101.9 Storage of materials and equipment

Separate areas for the storage of fuel, cleaning compounds and general maintenance equipment must be provided so as to prevent the contamination of the product in the event of a spillage or any other form of breakdown.

NT H101.10 Separation of work place

Food premises must not have direct communication with a room containing sanitary facilities, sleeping quarters, laundry, bathroom or garage or a room where animals are housed.

NT H101.11 Offensive material and trade waste

If offensive material or trade waste is stored, a separate area must be provided which-

- (a) is easily cleanable;
- (b) is graded to drain to a suitable drainage system; and
- (c) has available a supply of water under pressure.

NT H101.12 Mechanical ventilation of kitchens

In a commercial kitchen where food is prepared for sale, a mechanical ventilating exhaust system must be installed in accordance with Part F4.12.

Insert NT Part H102 as follows:

**NT PART H102 PREMISES TO BE USED
FOR ACTIVITIES INVOLVING SKIN
PENETRATION**

NT H102.1 Application of Part

This part applies to premises for tattooing, ear-piercing, acupuncture and like activities.

NT H102.2 Sanitary facilities

- (a) Sanitary facilities for customers must be provided and must include not less than-
 - (i) one water closet; and
 - (ii) one washbasin.
- (b) Sanitary facilities must be separated from the workroom by-
 - (i) an air lock with *self-closing* entry door; or
 - (ii) a *self-closing* door.

NT H102.3 Washbasins

The area in which skin penetration is done must be provided with-

- (a) one wash basin for each 10, or part of 10 employees; and
- (b) an adequate supply of hot and cold water controlled by foot-operated or elbow-operated taps.

Insert NT Part H103 as follows:

NT PART H103 MORTUARIES**NT H103.1 Application of Part**

This Part applies to any premises used for storage or preparation for burial, cremation or disposal by other means, of bodies of deceased persons.

NT H103.2 Layout of mortuary

- (a) A mortuary may be integral with the remainder of a building but must be separated physically from all public areas of that building.
- (b) Each mortuary at which bodies are prepared for burial, cremation or other disposal must be provided with a body preparation room-
 - (i) capable of being isolated from the remainder of the premises; and
 - (ii) having a *floor area* not less than 10 m².
- (c) A vehicle reception area or garage must be provided adjacent to and with direct access to the storage room or body preparation room to ensure that the transfer of uncoffined bodies is screened from public view.
- (d) Access to toilet and shower facilities from any other part of the mortuary premises must be only by way of an air lock.

NT H103.3 Construction of body preparation room

- (a) The floor must be-
 - (i) of impervious material with a smooth, unbroken surface; and
 - (ii) uniformly graded to a floor drain.
- (b) All walls and partitions must be of concrete or masonry with a smooth, unbroken finish for ease of cleaning.
- (c) All joints between the floor, walls, partitions, ceiling, ventilation grilles, fittings, pipework, *windows* and light fittings must be sealed with impervious material for ease of cleaning.

- (d) All joints between the floor and walls or partitions must be covered for ease of cleaning.
- (e) The body preparation room must be provided with at least one washbasin, fitted with elbow or foot-operated taps, and an adequate supply of hot and cold water.
- (f) The body preparation room must be provided with refrigerated storage facilities-
 - (i) with sufficient capacity for the storage of at least two adult bodies; and
 - (ii) capable of maintaining an internal temperature between 1°C and 5°C.

NT H103.4 Water supply and sewerage

Each mortuary with a body preparation room must be connected to-

- (a) a permanent water supply with a physical discontinuity between the water supply and all equipment, appliances, fittings and areas in the mortuary; and
- (b) a water carriage sewerage system.

SECTION I MAINTENANCE

PART I1 EQUIPMENT AND SAFETY INSTALLATIONS

Delete I1.1 and insert NT I1.1 as follows:

NT I1.1 Safety installations

Safety installations in buildings must be maintained in accordance with the requirements of the following Australian Standards as appropriate:

- AS 1851.1 Portable fire extinguishers
- AS 1851.2 Fire hose reels
- AS 1851.3 Automatic fire sprinkler systems
- AS 1851.4 Fire hydrant installations
- AS 1851.5 Automatic smoke/heat venting systems
- AS 1851.6 Management procedures for maintaining the fire precaution features of air-handling systems
- AS 1851.7 Fire-resistant door sets
- AS 1851.8 Automatic fire detection and alarm systems
- AS 1851.10 Emergency warning and intercommunication systems
- AS 2293.2 Emergency evacuation lighting for buildings, Part 2 Inspection and maintenance

APPENDIX

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QUEENSLAND

INTRODUCTION

This Appendix contains variations and additions to the Building Code of Australia (BCA) provisions which are considered necessary for the effective application of the Code in Queensland and shall be treated as amendments to the Code.

QUEENSLAND - BCA APPENDIX

CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application in Queensland as follows:

A - GENERAL PROVISIONS

- Qld A1.1 Definitions
- Qld A3.2 Classifications
- Qld Specification A1.3
Standards Adopted by Reference

B - STRUCTURE

- Qld B1.3 Materials and forms of construction

E - SERVICES AND EQUIPMENT

Qld Part E101 PROTECTION OF ELECTRICAL SUPPLY TO ESSENTIAL SERVICES

- Qld E101.1 Definition of essential services
- Qld E101.2 Protection of essential services

F - HEALTH AND AMENITY

- Qld F1.101 Flashings to narrow spaces
- Qld FO2 Objective
- Qld FF2.4 Functional Statements
- Qld FP2.5 Performance Requirements
- Qld F2.5 Construction of sanitary compartments

Qld Part F101 VERMIN CONTROL

- Qld F101.1 Control of vermin

G - ANCILLARY PROVISIONS

- G1.1 Swimming pools

Qld Part G101 CERTAIN ATTACHMENTS

- Qld G101.1 Prevention of falls from buildings and structures

Continued

Contents continued**H - SPECIAL USE BUILDINGS****Qld Part H101 WORKPLACES**

- Qld H101.1 Application of Part
- Qld H101.2 Objectives
- Qld H101.3 Floor surfaces
- Qld H101.4 Floor drainage
- Qld H101.5 Floor coverings
- Qld H101.6 Lighting
- Qld H101.7 Floor area and air space
- Qld H101.8 Dining rooms
- Qld H101.9 Dressing rooms
- Qld H101.10 Drinking water
- Qld H101.11 First aid

Qld Part H102 STABLES

- Qld H102.1 Construction of stables

Qld Part H103 KIOSKS

- Qld H103.1 Construction of kiosks

Qld Part H104 PREMISES USED FOR LEAD PROCESSING

- Qld H104.1 Application of Part
- Qld H104.2 Objectives
- Qld H104.3 Sole use of area
- Qld H104.4 Floor surfaces and drainage
- Qld H104.5 Installations of fittings and fixtures
- Qld H104.6 Interiors
- Qld H104.7 Washing facilities including showers
- Qld H104.8 Dressing rooms
- Qld H104.9 Dining rooms
- Qld H104.10 Exhaust systems

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Contents continued**Qld Part H105****WORKPLACES INVOLVING ASBESTOS**

- Qld H105.1 Application of Part
- Qld H105.2 Objectives
- Qld H105.3 Construction requirements
- Qld H105.4 Installation of fitting and fixtures
- Qld H105.5 Exhaust systems

Qld Part H106**WORKPLACES INVOLVING SPRAY PAINTING**

- Qld H106.1 Application of Part
- Qld H106.2 Objectives
- Qld H106.3 Requirements for booths
- Qld H106.4 Requirements of booths
- Qld H106.5 Exhaust systems

Qld Part H107**FOUNDRIES AND EXPLOSIVE BLASTING**

- Qld H107.1 Application of Part
- Qld H107.2 Objectives
- Qld H107.3 Requirements for blasting chambers
- Qld H107.4 Exhaust systems for blasting chambers
- Qld H107.5 Requirements for foundry areas
- Qld H107.6 Washing facilities including showers

Qld Part H108**DETENTION CENTRES**

- Qld H108.1 Application of Part
- Qld H108.2 Objectives
- Qld H108.3 Fire-resistance and stability
- Qld H108.4 Bounding construction
- Qld H108.5 Early Fire Hazard Indices
- Qld H108.6 Fire doors, smoke doors, fire windows and shutters
- Qld H108.7 Number of exits required
- Qld H108.8 Exit travel distances
- Qld H108.9 Doorways and doors
- Qld H108.10 Swinging doors
- Qld H108.11 Operation of latch
- Qld H108.12 Access for people with disabilities
- Qld H108.13 Hose reels
- Qld H108.14 Smoke control

SECTION A GENERAL PROVISIONS

PART A1 INTERPRETATION

In A1.1 vary definitions as follows:

Qld A1.1 Definitions

Insert *Detention centre*:

Detention Centre means a building in which persons are securely detained by means of the built structure including a prison, remand centre, juvenile *detention centre*, watch house or psychiatric *detention centre*.

Substitute *Open space*:

Open space means-

- (a) a space on an allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road; and
- (b) in the case of *detention centres*, includes a fenced enclosure, open to the sky (except for mesh cover) having a horizontal dimension of at least 6 m in every direction.

Substitute *Swimming pool*:

Swimming pool has the same meaning as in the Queensland Building Act.

Insert *Workplace*:

Workplace means any premises for the performance of work by employees or self-employed persons, including-

- (a) any area within the immediate vicinity of such premises where gear, plant, equipment or materials to be used in that work are kept; and
- (b) any building, structure, bridge, wharf, road or way on or within such premises or in the immediate vicinity.

PART A3 CLASSIFICATION OF BUILDINGS AND STRUCTURES

In A3.2 add paragraph (f) to the definition of a Class 3 building as follows:

Qld A3.2 Classifications

- (f) a residential part of a *Detention centre* for the accommodation of the inmates of the centre.

Insert in Table 1 of Specification A1.3 additional standards as follows:

Qld Specification A1.3 STANDARDS ADOPTED BY REFERENCE

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Qld Table 1 SCHEDULE OF REFERENCED DOCUMENTS			
No.	Date	Title	BCA clause(s)
AS 1076		Code of practice for selection, installation and maintenance of electrical apparatus and associated equipment for the use in explosive atmospheres (other than mining operations).	Qld H106.4, Qld H107.3
Part 1 -	1977	Basic requirements	
Part 3 -	1977	Apparatus with type of protection "d" - Flame proof enclosure	
Part 6 -	1977	Apparatus with type of protection "e"- Increased safety	
Part 7 -	1977	Apparatus with type of protection "n" - Non-sparking apparatus	
Part 8 -	1977	Apparatus with type of protection "s" - Special protection	
Part 13 -	1977	Installation and maintenance requirements for instrumentation	
AS 1136		Low voltage switchgear and control gear assemblies.	
Part 1 -	1988	General requirements Amdt 1- March 1989	Qld E101. 2
AS 2208 -	1978	Safety glazing materials for use in buildings (human impact considerations)	Qld H106.4, Qld H107.3
			Continued

Qld Table 1 continued			
No.	Date	Title	BCA clause(s)
AS 2381 -		Electrical equipment for explosive atmospheres - selection, installation and maintenance	Qld H106.4, Qld H107.3
Part 7 -	1989	Intrinsic safety	
Part 10 -	1989	Equipment in combustible dust (Class II) areas Amdt 1 - July 1989	
AS 2626 -	1983	Industrial safety belts and harness - Selection, use and maintenance	Qld G102.8
AS 3000 -	1986	Electrical installations - Buildings, structures and premises Amdt 2 - December 1987 Amdt 3 - July 1988 Amdt 4 - July 1989	Qld E101.1
		Queensland Forest Service of the Department of Primary Industries Technical Pamphlet No .1 Building Timbers, Properties and Recommendations for their use in Queensland.	Qld B1.3
		Queensland Department of Health Vermin Control Regulations.	Qld F101.1

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SECTION B STRUCTURE

PART B1 STRUCTURAL PROVISIONS

After B1.3(f)(ii) insert Qld B1.3(f)(iii) as follows:

Qld B1.3 Materials and forms of construction

- (f) Timber Construction:
 - (iii) Timber used for structural purposes: a species scheduled for the appropriate use in Schedules A, B or C in Queensland Forest Service of the Department of Primary Industries Technical Pamphlet No. 1 - Building Timbers, Properties and Recommendations for their Use in Queensland.

SECTION D ACCESS AND EGRESS

PART D2 CONSTRUCTION OF EXITS

Delete D2.16(f)(ii) and (g)(ii) and insert Qld D2.16(f)(ii) and (g)(ii) as follows:

Qld D2.16 balustrades

- (f) (ii) The height is not less than-
- (A) for floors not more than 3 m above the ground in a Class 2 building, 865 mm above the floor of any access path, balcony, landing or the like; or
 - (B) for floors greater than 3 m above the ground in a Class 2 building and all floors in a Class 3 to 9 building, 1 m above the floor of any access path, balcony, landing or the like; or
 - (C) 865 mm above the floor of a landing to a stair or ramp where the balustrade is provided along the inside edge of the landing and does not exceed a length of 500 mm.
- (g) (ii) For balustrades other than those provided under (b)-
- (A) any opening does not permit a 125 mm sphere to pass through it and for stairs, the space is measured above the nosings; and
 - (B) for floors more than 3 m above the ground, any horizontal or near horizontal elements within the balustrade between 150 mm and 760 mm above the floor must not facilitate climbing.

SECTION E SERVICES AND EQUIPMENT

Add Qld Part E101 as follows:

PART E101 PROTECTION OF ELECTRICAL SUPPLY TO ESSENTIAL SERVICES

Qld E101.1 Definition of essential services

In this Part, essential services has the meaning given in AS 3000 and includes such services as fire and smoke control systems, emergency lifts, emergency lighting and emergency warning and intercommunication systems.

Qld E101.2 Protection of essential services

Where essential services are *required* in a building, the electricity supply to the building must be connected to a main switchboard which must-

- (a) contain switchgear and protection devices that will prevent loss of supply to the essential services in the event of a fault condition in the non-essential switchboard; and
- (b) contain an essential services section in accordance with Form 3 of AS 1136.

SECTION F HEALTH AND AMENITY

PART F1 DAMP AND WEATHERPROOFING

Add Qld F1.101 as follows:

Qld F1.101 Flashings to narrow spaces

Spaces between buildings on adjoining sites which are narrower than 600 mm must be sealed off and flashed over to prevent the entrance of weather and vermin.

PART F2 SANITARY AND OTHER FACILITIES

OBJECTIVE

Delete FO2 and insert Qld FO2 as follows:

Qld FO2 The objective of this Part is to-

- (a) safeguard occupants from illness caused by infection; and
- (b) safeguard occupants from loss of amenity arising from the absence of adequate personal hygiene facilities; and
- (c) enable occupants to carry out laundering; and
- (d) provide for facilities to enable food preparation; and
- (e) enable unconscious occupants of *sanitary compartments* to be removed from the compartment.

FUNCTIONAL STATEMENTS

After FF2.3 add Qld FF2.4 as follows:

Qld FF2.4 A *sanitary compartment* is to have sufficient space or other means to permit an unconscious occupant to be removed from the compartment.

PERFORMANCE REQUIREMENTS

After FP2.4 add Qld FP2.5 as follows:

Qld FP2.5 A *sanitary compartment* must be constructed with sufficient space or other means to enable an unconscious occupant to be removed from the compartment.

DEEMED-TO-SATISFY PROVISIONS

Delete F2.5 and insert Qld F2.5 as follows:

Qld F2.5 Construction of sanitary compartments

- (a) Other than in an *early childhood centre*, *sanitary compartments* must have doors and partitions that separate adjacent compartments and extend-
 - (i) from floor level to the ceiling in the case of a unisex facility; or
 - (ii) to a height of not less than 1500 mm above the floor if primary *school* children are the principal users; or
 - (iii) 1800 mm above the floor in all other cases.
- (b) The door to a fully enclosed *sanitary compartment* must -
 - (i) open outwards; or
 - (ii) slide; or
 - (iii) be readily removable from the outside,
 unless there is a clear space of at least 1.2 m between the closet pan within the *sanitary compartment* and the nearest part of the doorway.

Add Part F101 as follows:

QLD PART F101 VERMIN CONTROL

Qld F101.1 Control of vermin

Buildings must be constructed to prevent the entry of vermin in accordance with Part 17 (*Vermin Control*) of the *Health Regulation 1996*.

SECTION G ANCILLARY PROVISIONS

PART G1 MINOR STRUCTURES AND COMPONENTS

After G1.1(b) add Qld G1.1(c) as follows:

Qld G1.1 Swimming pools

- (c) Electrical conductor: Where an in-ground *swimming* or *spa pool* is constructed with metallic reinforcing, the means for attaching an electrical conductor to the reinforcing must-
- (i) be incorporated at the time of construction;
 - (ii) be positioned for use without causing damage to the pool;
 - (iii) be in accordance with the requirements of the relevant statutory electricity supply authority; and
 - (iv) where the connecting facility is below *ground level*, have its location clearly marked on the structure or shown on approved plans.

Add Qld Part G101 as follows:

QLD PART G101 CERTAIN ATTACHMENTS

Qld G101.1 Prevention of falls from buildings or structures

Where a person is exposed to the hazard of falling from a building or structure while cleaning or maintenance work is being carried out-

- (a) a work system designed to prevent such falls must be used;
- (b) where safety belt anchorage points are used they must be positioned on the building or structure so that a lifeline or safety harness may be attached before proceeding to a point where it is possible to fall; and
- (c) anchorage points for the attachment of safety harnesses must comply with AS 2626.

SECTION H SPECIAL USE BUILDINGS

Add Qld Part H101 as follows:

QLD PART H101 WORKPLACES

Qld H101.1 Application of Part

This Part applies to every building or part of a building to be used as a *workplace*, except for a project under construction.

Qld H101.2 Objectives

Workplaces must be designed and constructed to provide suitable standards of health and safety for employees.

Qld H101.3 Floor surfaces

- (a) Floor surfaces must be designed to prevent slips, trips, and falls, and in particular, all floors must have an even slip-resistant surface, without obstructions which might create tripping or stumbling hazards.
- (b) Where the nature of the work process is such that spillage or washdown is likely to occur, floors must be-
 - (i) finished with a surface impervious to the liquids likely to be spilt or used for cleaning; and
 - (ii) sealed to all joining walls with an impervious seal, in such a way that the seal is concavely rounded, and continued up all joining walls for a minimum of 75 mm.

Qld H101.4 Floor drainage

- (a) Where the nature of the work process is such that spillage or washdown is likely to occur, floors must be graded to drain off liquids in accordance with the following:
 - (i) Wash or hose-down areas: 1:25.
 - (ii) Wet or mop-down areas: 1:50.
- (b) Wherever practicable, drains must be installed to intercept liquid at spillage points, to prevent the spread of liquids over the floor surface.
- (c) Where the effluent from drains is likely to be offensive, it must be intercepted by suitable deodorising tanks.

Qld H101.5 Floor coverings

- (a) Floor coverings that prevent slips, trips and falls must be provided. In particular, all standing working positions of employees must be covered with either-
 - (i) wood, rubber, linoleum, resilient types of plastic tiles;

- (ii) suitable compositions containing asphalt, rubber, cork, magnesite; or
 - (iii) other semi-resilient, thermally non-conductive materials.
- (b) If spillage of liquids may occur where an employee is *required* to work, slip resistant continuous matting must be provided. The matting must be non-liquid absorbing, and allow liquids to pass through it.
- (c) Where any floor covering or matting is in localised sections, the coverings must be as thin as practicable, with edges sloped to the main floor.

Qld H101.6 Lighting

Lighting from natural and/or artificial sources to the standard appropriate for the nature of, location and times at which work is performed, must be provided in accordance with AS 1680.

Qld H101.7 Floor area and air space

- (a) **Requirements for *workplace* area and space:** Working area and air space adequate to allow suitable standards of health and safety for each employee must be provided.
- (b) **Requirements of *workplace* area:** An area of 2.3 m² free of any encumbrance for each employee satisfies (a).
- (c) **Variation of *required* area:** *Required workplace* area as specified in (b) may be varied in accordance with any guidelines that may be set in the Code of Practice - *Workplace Amenities*, produced by the Division of *Workplace Health and Safety*. Where any uncertainty exists, the Local Authority must consult with the Division of *Workplace Health and Safety*. The process for variation of *workplace* area is set out in the Standard Building By-laws.

Qld H101.8 Dining rooms

- (a) **Requirements for dining facilities:** Dining facilities must be provided where the nature of work performed does not allow an employee to eat at or in their work station or in their work area, in safe and hygienic conditions. Where provided, dining facilities must be designed and located so that both people and food are kept free of contamination.
- (b) **Requirements of dining facilities:** Where dining facilities are *required* by (a), a dining room must be provided at every *workplace*, except-
- (i) for five or less employees, a dining area may be provided;

- (ii) for shops situated in a shopping complex, one dining room may be used to satisfy the requirements of all the shops in the complex. The dining room area must be based on the total employees of all the shops in the complex.

For fifteen or less employees, all of the same sex, a dining room may be combined with a dressing room.

- (c) **Requirements of dining areas:** A dining area must provide adequate facilities for-
 - (i) washing and cleaning of utensils; and
 - (ii) storage of utensils, free of dust and vermin.
- (d) **Requirements of dining rooms:** A dining room or meal place must have all the provisions of a dining area, in addition to the following:
 - (i) tables providing 600 mm table length per employee;
 - (ii) a refrigerator;
 - (iii) dishwashing sink with draining board and reticulated hot and cold water; and
 - (iv) facilities for the storage of foodstuffs, free of dust and vermin.
- (e) **Dining room size:** The size of a dining facility must be calculated on the basis of the maximum number of employees using it at any one time. The area *required* for each employee is set out in the following Table.

Number of employees	Area required
6 to 12 employees	11 m ²
additional employees up to 25	an additional 0.92 m ²
additional employees thereafter	an additional 0.75 m ²

Qld H101.9 Dressing rooms

- (a) **Requirements for dressing rooms:** Where the nature of work requires employees to change in and out of apparel specific to that work, a dressing room for each sex must be provided.
- (b) **Requirements of dressing rooms:**
 - (i) Dressing rooms must be set apart from workrooms, and as near as practicable to *sanitary compartments* and washing facilities.

- (ii) Where the clothing of an employee may become wet while engaged in work, a room equipped with drying appliances must be provided adjoining a dressing room.
- (iii) A combined dining-dressing room must conform with the requirements of Qld H101.8 in addition to the requirements of this Part.
- (iv) A dressing room must be furnished with the following:
 - (A) a locker for each employee;
 - (B) protective hanging space for clothing;
 - (C) seating accommodation;
 - (D) mirrors and shelving; and
 - (E) a couch, pillow and blanket.
- (c) **Dressing room area:** For the purpose of dressing room design and layout, the following dimensions and sizes are set out.
 - (i) The minimum unencumbered *floor area* of a dressing room must be 1.8 m², and in additional unencumbered area per employee as set out below:

Type of work	Area
Sedentary or semi-sedentary	0.37 m ²
Light to medium and clean	0.46 m ²
Heavy, hot or dirty	0.65 m ²

- (ii) Lockers must be not less than 300 mm wide and 450 mm deep.
- (iii) Passages between facing lockers must be at least 1500 mm wide, or with lockers on one side only at least 900 mm wide.

Qld H101.10 Drinking water

- (a) **Requirement for drinking water:** An adequate supply of clean wholesome drinking water must be provided at every *workplace*.
- (b) **Requirements of drinking water points:** Drinking water must-
 - (i) in situations where workers are likely to be exposed to heat stress or dehydration, be in a readily accessible position; and
 - (ii) not be located in a *sanitary compartment*.

- (c) **Drinking fountains:** Where there are more than ten employees, drinking fountains should be provided in the following numbers, wherever practicable.

11 to 40 employees:	1
each additional 40 (or part thereof):	1 additional.

Qld H101.11 First aid

- (a) **Requirement for first aid:** When the number of employees at any one time exceeds 200, a casualty room, not less than 11 m² in area, dedicated to first aid must be provided.
- (b) **Requirements of casualty rooms:** A casualty room must:
- (i) be located as near as practicable to workrooms; and
 - (ii) contain:
 - (A) a basin washing point; and
 - (B) a stainless steel sink with reticulated hot and cold water, trap connected to waste drainage; and
 - (C) be clearly signed on each door with 'FIRST AID', and the name of the nurse or attendant on duty.

Add Qld Part H102 as follows:

QLD PART H102 STABLES

Qld H102.1 Construction of stables

A building used for the keeping of animals and enclosed on 3 or more sides must have-

- (a) a suitably drained stable floor constructed of concrete, masonry or the like which is impervious to moisture; and
- (b) every room, other than a store room, constructed over or adjoining the stable, separated from the stable by walls or floor or both, as the case may be, of concrete, masonry or the like which is impervious to moisture; and
- (c) a suitable manure container constructed of impervious material and fitted with covers provided adjacent to the stable.

Add Qld Part H103 as follows:

QLD PART H103 KIOSKS

Qld H103.1 Construction of kiosks

- (a) For the purposes of this clause, kiosk means a stall or a compartment enclosed by walls, which the public does not enter, and which is used for the sale or distribution of goods or services.
- (b) A kiosk must not be erected unless-
 - (i) it is situated at least 1.5 m from a road or, if it is constructed as a compartment enclosed by walls, it may be situated at a lesser suitable distance;
 - (ii) it is in an arcade or, if it is not in an arcade, it must have minimum ceiling height of 2400 mm;
 - (iii) every internal dimension is 1 m or more;
 - (iv) it has a *floor area* of at least 1.5 m² if it is to be occupied by one person, or of at least 2 m² per person if it is to be occupied by 2 or more persons; and
 - (v) it has ventilation in accordance with F4.5.

Add Qld Part H104 as follows:

QLD PART H104 PREMISES USED FOR LEAD PROCESSING

Qld H104.1 Application of Part

This Part is applicable to every building or part of a building in which lead processes are carried out, other than a project under construction. The requirements of this Part are in addition to the more general requirements for *workplaces*.

Qld H104.2 Objectives

Areas in *workplaces* used for lead processing must be designed and constructed to prevent lead contamination of employees or the environment.

Qld H104.3 Sole use of area

Areas used for lead processing must not be used for any other purpose.

Qld H104.4 Floor surfaces and drainage

All floors must be:

- (a) finished with a smooth impervious surface;
- (b) graded and drained to permit flushing with water; and

- (c) sealed to all joining walls with an impervious seal, continued up all joining walls for minimum of 75 mm.

Qld H104.5 Installation of fittings and fixtures

All plant fittings and fixtures must be designed and installed to allow the floor underneath to be cleaned by water or suction cleaning.

Qld H104.6 Interiors

The *workplace* interior, including wall linings, ceilings, roof structure and other structure must:

- (a) have smooth, impervious surfaces;
- (b) be designed, as far as practicable, to avoid projections or surfaces which may collect dust.

Qld H104.7 Washing facilities including showers

Washing and showering facilities must have hot and cold water, and be provided in the following numbers-

- (a) one wash basin for every 5 persons (or part thereof); and
- (b) one shower for every 8 persons (or part thereof).

Qld H104.8 Dressing rooms

- (a) Dressing rooms must not be combined with a dining room.
- (b) The provision of lockers or compartments must allow the separate storage of protective clothing and work clothing.

Qld H104.9 Dining rooms

- (a) A dining facility must not be located in any area where any compound of lead, mercurial or arsenical preparation or any other poisonous substance is used, manufactured, produced or stored.

Qld 104.10 Exhaust systems

- (a) Any area exposed to a process causing dust must be served by an exhaust system capable of collecting all such dust.
- (b) Pots, containers or furnaces for processing lead must be connected to an exhaust system capable of safely and effectively collecting all dust, fumes or gases generated in the process.

Such an exhaust system must provide an airflow at any working opening of at least 1 m/s for fumes and gases, and 2.5 m/s for dust collection, measured across the plane of the opening.

Add Qld Part H105 as follows:

QLD PART H105 WORKPLACES INVOLVING ASBESTOS

Qld H105.1 Application of Part

This Part is applicable to every building or part of a building in which asbestos is present and capable of giving off dust.

The requirements of this Part are in addition to the more general requirements for *workplaces*.

Qld H105.2 Objectives

Workplaces using, producing, or containing asbestos must be designed and constructed to prevent the discharge of asbestos dust into the atmosphere.

Qld H105.3 Construction requirements

The interior of any building used for any process involving asbestos, must:

- (a) have smooth, impervious surfaces;
- (b) be designed, as far as practicable, to avoid projections or surfaces which may collect dust; and
- (c) be equipped with a vacuum cleaning system, including filters and a central collection point, designed and constructed to prevent the entry of asbestos from the vacuum system into the atmosphere.

Qld H105.4 Installation of fittings and fixtures

All plant fittings and fixtures must be designed and installed to allow cleaning by vacuum system or other method, to prevent the entry of asbestos dust into the atmosphere.

Qld 105.5 Exhaust systems

Any area exposed to a process causing dust must be served by an exhaust system that prevents the entry of asbestos dust into the atmosphere.

Add Qld Part H106 as follows:

QLD PART H106 WORKPLACES INVOLVING SPRAY PAINTING

Qld H106.1 Application of Part

This Part is applicable to every building or part of a building in which spray painting or spray coating takes place, except for a project under construction.

The requirements of this Part are in addition to the more general requirements for *workplaces*.

Qld H106.2 Objectives

Workplaces involving spray painting must be designed and constructed to-

- (a) ensure the safety of operators;
- (b) prevent the occurrence and spread of fire; and
- (c) prevent the entry of impurities into the atmosphere.

Qld H106.3 Requirements for booths

- (a) A booth is *required* for spray painting or coating, except where:
 - (i) all other activity within 12 m is separated from the spray painting by a *non-combustible* wall;
 - (ii) the work is performed in an open workroom and:
 - (A) the work performed is minor spotting and touching up, for not more than 90 minutes in any one day; or
 - (B) for not more than 15 minutes in any 2 hour period, and not involving lead or silica based paints.
- (b) The ventilation facilities of the workroom in which a booth is located must allow free entrance of air into the booth.

Qld H106.4 Requirements of booths

Booths must-

- (a) be entirely constructed or internally lined with metal or other durable *non-combustible* material;
- (b) have a smooth impervious, *non-combustible* floor surface, extending at least 900 mm beyond the entrance to the booth;
- (c) have an emergency *exit* permitting rapid egress, consisting of a door or panel opening outward, situated as far as possible from the normal means of entry, and marked with an EXIT sign;
- (d) be constructed so that *windows* are fitted with glass complying with AS 2208, in fixed metal sashes; and
- (e) have electrical installations which comply with AS 2381 and AS 1076.

Qld 106.5 Exhaust systems

A booth must be provided with an exhaust ventilation system which-

- (a) provides uniform air movement of 0.5 m/s in the zone of the spray operator. This may be reduced to 0.3 m/s where only electrostatic spray painting equipment is used; and
- (b) prevents air from the booth entering into the general workspace.

Add Qld Part H107 as follows:

QLD PART H107 FOUNDRIES AND ABRASIVE BLASTING

Qld H107.1 Application of Part

This Part is applicable to every building or part of a building in which foundry operations or abrasive blasting take place, except for a project under construction.

The requirements of this Part are in addition to the more general requirements for *workplaces*.

Qld H107.2 Objectives

Foundries and *workplaces* involving abrasive blasting must be designed and constructed to-

- (a) provide suitable standards of safety for employees; and
- (b) prevent the discharge of impurities into the atmosphere.

Qld H107.3 Requirements for blasting chambers

Blasting chambers must-

- (a) be entirely constructed or internally lined with metal or other durable *non-combustible* material;
- (b) minimise dust settlement, and prevent the escape of dust.
- (c) be constructed so that *windows* are fitted with glass complying with AS 2208 in fixed metal sashes;
- (d) have an emergency *exit* permitting rapid egress, consisting of a door or panel opening outward, situated as far as possible from the normal means of entry, and marked with an EXIT sign;
- (e) be fitted with interlocking doors to prevent blasting while doors are open; and
- (f) have electrical installations which comply with AS 2381 and AS 1076.

Qld 107.4 Exhaust systems for blasting chambers

A blasting chamber must be provided with an exhaust ventilation system which-

- (a) provides minimum air movement of 0.4 m/s in the direction of extraction. This may be reduced to 0.3 m/s for down-draught air flow chambers;
- (b) prevents air extracted from the chamber entering into the general workspace; and
- (c) filters and cleans extracted air to ensure the removal of all contaminants.

Qld H107.5 Requirements of foundry areas

- (a) Every floor in a foundry must be even, *non-combustible* material, and at a uniform level wherever practicable.
- (b) Pit furnaces and pouring pits must be covered by a substantial grating at the point at which metal is removed.
- (c) Cooling racks and all fixed sources of heat must be provided, wherever practicable, with ventilation by means of flues extending to open air.

Qld H107.6 Washing facilities including showers

Washing and showering facilities must have hot and cold water, and be provided on the following basis:

- (a) one wash basin for every 5 persons (or part thereof); and
- (c) one shower for every 8 persons (or part thereof).

Add Qld Part H108 as follows:

QLD PART H108 DETENTION CENTRES**Qld H108.1 Application of Part**

This part applies to those parts of a *detention centre* used for residential accommodation (Class 3), in which the occupants are not permitted free movement within or egress from the building. The BCA applies to *detention centres* except where otherwise specified in this Part.

Qld H108.2 Objectives

The occupants of *detention centres* must be protected against fire and smoke without mitigating the security *required of detention centres*

Qld H108.3 Fire-resistance and stability

The provisions of C1.5 do not apply to the Class 3 parts of *detention centres*.

Qld H108.4 Bounding construction

The provisions of C3.11 apply except that-

- (a) the doors need not be *self-closing*; and
- (b) the doors need not comply with C3.11(d) if Qld H108.14 is complied with.

Qld H108.5 Early Fire Hazard Indices

Note: Special requirements on early fire hazard indices in *detention centres* are under preparation in Queensland.

Qld H108.6 Fire doors, smoke doors, fire windows and shutters

The provisions of clause 3 of Specification C3.4 apply except that doors need not-

- (a) swing in the direction of egress;
- (b) return to the fully closed position after each opening; or
- (c) close *automatically*.

Qld H108.7 Number of exits required

The provisions of D1.2 apply except that the Class 3 parts of detention centres are not subject to C1.5.

Qld H108.8 Exit travel distances

- (a) The provisions of D1.4 do not apply to the Class 3 parts of *detention centres*.
- (b) The entrance doorway of a *sole-occupancy unit* must be not more than 30 m from an *exit* or a point from which travel in different directions to two *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m.

Qld H108.9 Doorways and doors

In the Class 3 parts of *detention centres*, a doorway serving as a *required exit*, or forming part of a *required exit* may be fitted with a roller shutter or tilt-up door provided that-

- (a) it may be opened, without mechanical assistance, manually under a force of not more than 110 N; or
- (b) if it is a mechanically operated door, it contains a personnel doorway complying with D1.6.

Qld H108.10 Swinging doors

Class 3 parts of *detention centres* must comply with D2.20 except that doors need not swing in the direction of egress.

Qld H108.11 Operation of latch

A door in a *required exit*, forming part of a *required exit* or in the path of travel to a *required exit* must be-

- (a) readily openable without a key from the side that faces a person seeking egress, by a single hand action on a single device which is located between 900 mm and 1.2 m from the floor; or
- (b) capable of being unlocked by hand by a person or persons, specifically nominated by the owner, properly instructed as to the duties and responsibilities involved and available at all times when the building is lawfully occupied so that persons in the building or part may be escorted to *open space* or other place of safety if there is a fire or other emergency.

Qld H108.12 Access for people with disabilities

It is not necessary for the Class 3 parts of *detention centres* to comply with the provisions of Part D3.

Qld H108.13 Hose reels

- (a) Hose reels must comply with the provisions of AS 1221 and AS 2441 except that hosereel cabinets may be lockable.
- (b) Hosereels must be provided in every Class 3 part of a *detention centre*.

Qld H108.14 Smoke control

Where doors do not comply with C3.11(d) or where openings do not comply with C3.11(e), then a system of mechanical smoke extraction must be provided to the corridor, hallway, room, or *non-fire-isolated stairway* serving as a *required exit*, to which the *sole-occupancy unit* has access.

APPENDIX

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SOUTH AUSTRALIA**INTRODUCTION**

This Appendix contains variations and additions to the BCA provisions which are considered necessary for the effective application of the Code in South Australia.

These variations and additions are to be treated as amendments to the BCA and apply to the construction or alteration of all buildings requiring approval under the Development Act and Regulations 1993.

SOUTH AUSTRALIA - BCA APPENDIX

CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application in South Australia as follows:

A - GENERAL PROVISIONS

SA Specification A1.3
Standards Adopted by Reference

D - ACCESS AND EGRESS

SA D3.1 Application of Part
SA Table D3.2 Requirements for Access for People with Disabilities
SA D3.4 Concessions

E - SERVICES AND EQUIPMENT

SA E1.3 Fire hydrants
SA E1.4 Hose reels
SA E4.2 Emergency lighting requirements

F - HEALTH AND AMENITY

SA FP1.5, SA FP1.6 and SA FP1.8
Performance Requirements
SA F1.0 Deemed-to-Satisfy Provisions
SA F1.7 Water proofing of wet areas in buildings
SA F1.9 Damp-proofing
SA F1.10 Damp-proofing of floors on the ground
SA F1.11 Provision of floor wastes
SA F2.3 Facilities in Class 3 to 9 Buildings
SA Table F2.3 Sanitary Facilities in Class 9b School Buildings

Continued

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Contents continued**G - ANCILLARY PROVISIONS**

- SA GF1.4 Functional Statements
- SA GP1.5 Performance Requirements
- SA G1.0 Deemed-to-Satisfy Provisions
- SA G1.1 Swimming pools
- SA G5.2 Protection

SA Part G7 ACCESS FOR MAINTENANCE

- SA GO7 Objective
- SA GF7.1 and SA GF7.2
 Functional Statements
- SA GP7.1 and GP7.2
 Performance Requirements
- SA G7.0 Deemed-to-Satisfy Provisions
- SA G7.1 Application of Part
- SA G7.2 Access for window cleaning
- SA G7.3 Access for inspection and maintenance between
 buildings

SA Part G8 MISCELLANEOUS PROVISIONS

- SA GO8 Objective
- SA GF8.1 Functional Statement
- SA GP8.1 Performance Requirement
- SA G8.0 Deemed-to-Satisfy Provisions
- SA G8.1 Application of Part
- SA G8.2 Attachments to buildings

I - MAINTENANCE

- SA I1.1 Safety installations

SECTION A GENERAL PROVISIONS

PART A1 INTERPRETATION

Insert in Table 1 of Specification A1.3 additional standards as follows:

SA Specification A1.3 STANDARDS ADOPTED BY REFERENCE

SA Table 1 SCHEDULE OF REFERENCED DOCUMENTS			
No	Date	Title	BCA clause(s)
AS 2626	1983	Industrial safety belts and harnesses - Selection, use and maintenance	SA G7.2
AS 2870	1996	Residential slabs and footings- Construction	SA F1.10

SECTION D ACCESS AND EGRESS

PART D3 ACCESS FOR PEOPLE WITH DISABILITIES

Delete D3.1 and substitute:

SA D3.1 Application of Part

This Part applies to all Class 3, 5, 6, 7, 8, 9 and 10a buildings and to certain Class 2 buildings where expressly referred to.

Insert in Table D3.2 the following:

SA Table D3.2 Access to buildings

SA Table D3.2 REQUIREMENTS FOR ACCESS FOR PEOPLE WITH DISABILITIES	
Class of building	Provision for access
Class 2	
Whenever 20 or more <i>sole-occupancy units</i> of Class 2 are constructed on a <i>site</i>	To and within one <i>sole-occupancy unit</i> or 5% of the <i>sole-occupancy units</i> , whichever is the greater

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Add SA D3.4(e) as follows:

SA D3.4 Concessions

- (e) the whole of a Class 5, 6, 7 and 8 building if one or more *storeys* in the building is provided with access facilities as specified in SA Table D3.2, and parts of those *storeys* are approved for the purpose of a disabled person having business in that building.

SECTION E SERVICES AND EQUIPMENT

PART E1 FIRE FIGHTING EQUIPMENT

Delete E1.3(b)(iii)(C) and insert SA E1.3(b)(iii)(C) as follows:

SA E1.3 Fire hydrants

- (b) (iii) (C) if connected to a reticulated water supply and installed in a building not greater than 25 m in *effective height*, one pump driven by-
- (aa) a compression ignition engine, or
 - (bb) an electric motor supplied from an emergency power generator, or
 - (cc) an electric motor connected to two completely independent power sources through an automatic change-over facility, except that Class 2, 3, 5 and 9 buildings of not more than 2 000 m² *fire compartments* and up to 12.5 m *effective height* may be served by a booster for use by the attending Fire Authorities; and

Add SA E1.4(c) as follows:

SA E1.4 Hose reels

- (c) Concession for primary and secondary *schools* - E1.4 does not apply to areas in primary and secondary *schools* designated for normal school use. Areas designated for community use must comply with E1.4.

PART E4 EMERGENCY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS

Delete E4.2(h) and insert SA E4.2(h), and add SA E4.2(i) as follows:

SA E4.2 Emergency lighting requirements

- (h) in every *required* fire control centre; and
- (i) in every primary and secondary ~~school~~
 - (i) E4.2(b) does not apply to areas which have adequate natural light and are only used during daylight hours; and
 - (ii) E4.2(b) does apply to areas designated for use outside normal daylight hours.

SECTION F HEALTH AND AMENITY

PART F1 DAMP AND WEATHERPROOFING

PERFORMANCE REQUIREMENT

Delete FP1.5 and add SA FP1.5 as follows:

SA FP1.5 A building element must be protected against deterioration caused by undue dampness or other conditions as appropriate to its geophysical environment.

Delete FP1.6 and add SA FP1.6 as follows:

SA FP1.6 Accidental water overflow from a bathroom, laundry facility or the like must be prevented from penetrating to adjoining rooms or spaces.

After FP1.7 add SA FP1.8 as follows:

SA FP1.8 In laundries, bathrooms or rooms containing shower facilities the floors must be installed in a manner that will prevent accumulation of surface water which could create unhealthy or hazardous conditions.

Delete F1.0(b) and add SA F1.0(b) as follows:

SA F1.0 Deemed-to-Satisfy Provisions

- (b) Performance Requirements FP1.4, SA FP1.5, SA FP1.6, FP1.7 and SA FP1.8 are satisfied by complying with F1.5, F1.6, SA F1.7, SA F1.9 to SA F1.11 and F1.12.

Delete F1.7 and insert SA F1.7 as follows:

SA F1.7 Water proofing of wet areas in buildings

Water-proofing of wet areas in buildings must comply with Minister's Specification SA F1.7.

Delete F1.9(b) and insert SA F1.9(b) as follows:

SA F1.9 Damp-proofing

- (b) Damp-proof courses must exhibit long term resistance to degradation by dissolved salts in groundwater and consist of-
- (i) embossed black polyethylene film meeting the requirements of clause 7.6 of AS/NZS 2904; or
 - (ii) polyethylene coated aluminium meeting the requirements of clause 7.4 of AS/NZS 2904; or
 - (iii) bitumen impregnated materials of not less than 2.5 mm thickness, meeting the requirements of clause 7.5 of AS/NZS 2904, when used in walls not higher than 7.8 m above the level of the damp-proof course.

Delete F1.10 and insert SA F1.10 as follows:

SA F1.10 Damp-proofing of floors on the ground

- (a) If a floor of a room is laid on the ground or on fill, a damp-proofing membrane complying with Section 5.3.3 of AS 2870 must be installed.
- (b) A damp-proofing membrane need not be provided if-
- (i) weatherproofing is not *required*; or
 - (ii) the floor is the base of a stair, lift or similar *shaft* which is adequately drained by gravitation or mechanical means.

Delete F1.11 as follows:

SA F1.11 Provision of floor wastes

Grading and draining of wet area floors must comply with Minister's Specification SA F1.7.

PART F2 SANITARY AND OTHER FACILITIES

Delete F2.3(a) and insert SA F2.3(a) as follows:

SA F2.3 Facilities for Class 3 to 9 buildings

- (a) Sanitary facilities must be provided-
- (i) for Class 3, 5, 6, 7, 8 and 9 buildings in accordance with Table F2.3, with the exception of Class 9b *schools*, and
 - (ii) for Class 9b *schools* in accordance with SA Table F2.3.

Vary Table F2.3 by deleting section 9b-Schools and replacing it with the following:

SA Table F2.3 SANITARY FACILITIES IN CLASS 3, 5, 6, 7, 8 AND 9 BUILDINGS												
Class of Building	User	Max Number Served by										
		Closet Fixture(s)				Urinal(s)			Washbasin(s)			
		1	2	Each Extra -up to 100	Each Extra -over 100	1	2	Each Extra	1	2	Each Extra	
<i>9b-Schools, not being primary or secondary schools</i>	Employees											
	Males	20	40	20	20	20	45	30	30	60	30	
	Females	5	20	15	15				30	60	30	
	Students											
	Males	30	70	70	70	30	70	35	20	40	40	
	Females	10	20	20	20				20	40	40	
<i>9b-schools being primary and secondary schools 7 and 8</i>	Employees											
	Males	10	30	20		10	30	20	15	30	20	
	Females	6	15	10					15	30	20	
	Students											
	Males	20	50	50	100	10	50	100	10	50	75	
	Females	10	25	25	50				10	50	75	

Add the following notes to Table F2.3 and SA Table F2.3:

Additional NOTES to Table F2.3 and SA Table F2.3:

A unisex facility shall comprise of one closet pan, one washbasin and means of disposal of sanitary towels.

Buildings of more than one *storey* - in a building of more than one *storey*-

(a) where more than 50 persons are employed in a single *storey*, sanitary facilities must be provided on that *storey*.

(b) sanitary facilities must not be more than one *storey* away from any work area.

Other facilities - Occupational Health, Safety & Welfare Regulations require that showers and changing facilities be provided in some work places, depending on the nature of the work and working conditions of the employees.

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SECTION G ANCILLARY PROVISIONS

PART G1 MINOR STRUCTURES AND COMPONENTS

FUNCTIONAL STATEMENTS

After GF1.3 add SA GF1.4 as follows:

SA GF1.4 A *swimming pool* must not allow a young child to be trapped or injured due to suction by pump intakes.

PERFORMANCE REQUIREMENTS

After GP1.4 add SA GP1.5 as follows:

SA GP1.5 Pump intakes to *swimming pools* must incorporate safety protection measures to prevent injury to a young child due to entrapment by suction.

Delete G1.0(b) and insert SA G1.0(b) as follows:

SA G1.0 Deemed-to-Satisfy Provisions

(b) Performance Requirements GP1.2 to GP1.4 and SA GP1.5 are satisfied by complying with G1.1 and G1.2.

After G1.1(b) insert SA G1.1(c) as follows:

SA G1.1 Swimming pools

(c) **Pump Intakes:** A swimming pool water recirculation and filtration system must comply with AS 1926.3 and have at least two pump intakes not less than 800 mm apart.

PART G5 CONSTRUCTION IN BUSHFIRE PRONE AREAS

Delete G 5.2 and insert SA G5.2 as follows:

SA G5.2 Protection

A building in a *designated bushfire prone area* must comply with Minister's Specification SA G5.2.

Add SA Part G7 as follows:

SA PART G7 ACCESS FOR MAINTENANCE

OBJECTIVE

SA G07 The objectives of this Part are-

- (a) to safeguard people from injury while cleaning windows; and
- (b) to safeguard people from injury or illness resulting from the creation of hazardous spaces between buildings.

FUNCTIONAL STATEMENTS

SA GF7.1 A building is to provide people with safe conditions for carrying out window cleaning operations.

SA GF7.2 The space between buildings must not allow hazardous conditions to arise due to accumulation of rubbish that cannot readily be removed.

PERFORMANCE REQUIREMENTS

SA GP7.1 Where any part of a *window* in a building is more than 5.5 m above ground level, provision must be made for safe access to the external surface of the *window* for minor maintenance and cleaning.

- SA GP7.2** The space between buildings must be sufficient to allow access for inspection and maintenance, to avoid hazardous conditions arising due to accumulation of rubbish that could-
- (a) bridge termite barriers; or
 - (b) harbour vermin; or
 - (c) create a *fire hazard*.

SA G7.0 Deemed-to-Satisfy Provisions

Performance Requirements SA GP7.1 and SA GP7.2 are satisfied by complying with SA G7.1 to SA G7.3.

SA G7.1 Application of Part

The following provisions apply to Class 2 to 9 buildings.

SA G7.2 Access for window cleaning

Where any part of a *window* in a building is more than 5.5 m above ground level, access to the external surface of the *window* for minor maintenance and cleaning must be provided by any of the following methods-

- (a) by means of a moveable gantry; or
- (b) by means of reversible pivoting sashes, each of which has catches that secure the sash in either the normal or reversed position and give visual indication that the *window* is secure, provided that where a *window* sill is less than 900 mm above floor level, safety anchorages are provided; or
- (c) by means of safety harness, having all anchorages-
 - (i) designed and installed in accordance with AS 2626; and
 - (ii) constructed of approved corrosion resistant metal;
- (d) by means of opening sashes, in which case the maximum reach to the farthest part of the *window* must not exceed 500 mm upwards or 1 m sideways or downwards and provided that where the *window* sill is less than 900 mm above floor level, safety anchorages are provided; or
- (e) by means of ledges, sunhoods or balconies-
 - (i) that have a width of not less than 500 mm, a cross fall not greater than 1 in 12 and a handrail that conforms to AS 1657; or

- (f) by other means approved by the Department for Industrial Affairs.

SA G7.3 Access for inspection and maintenance between buildings

Every part of an *external wall* of a building must be not less than 600 mm from-

- (a) the *external wall* of any other building on the same allotment, unless the two buildings are abutting; or
- (b) any boundary of the allotment, unless that wall is on or abutting that boundary,

unless the space between external columns is not infilled.

Add SA Part G8 as follows:

SA PART G8 MISCELLANEOUS PROVISIONS

OBJECTIVE

- SA G08** The objective of this Part is to safeguard people from injury resulting from hazardous conditions being created by building attachments.

FUNCTIONAL STATEMENT

- SA GF8.1** A building is to be provided with safeguards to prevent a building attachment-
- (a) collapsing; and
 - (b) creating hazardous conditions by its water run-off; and
 - (c) affecting adjacent road safety conditions by its projection; and
 - (d) creating a *fire hazard* above a street.

PERFORMANCE REQUIREMENT

- SA GP8.1** An attachment to a building must incorporate features that will-
- (a) protect it against corrosion; and
 - (b) collect and discharge its rainwater run-off safely; and
 - (c) prevent its projection affecting adjacent road safety conditions or pedestrian traffic; and
 - (d) provide resistance to the spread of fire if it overhangs a street boundary;
- to a degree necessary to avoid creating hazardous conditions that may cause injury to people passing below or driving past.

SA G8.0 Deemed-to-Satisfy Provisions

Performance Requirement SA GP8.1 is satisfied by complying with SA G8.1 and SA G8.2.

SA G8.1 Application of Part

The following provisions apply to Class 2 to 9 buildings.

SA G8.2 Attachments to buildings

- (a) An attachment to a building that is in the nature of a balcony or awning, bridge, gangway, hoarding or trade sign, sky sign, mast, flagpole, tower, aerial or antenna, lantern, cathead, crane, chimney, flue or duct, or an installation for cleaning and maintenance access must-
 - (i) have all metal parts of corrosion resistant metal, or other metal suitably protected;
 - (ii) not overhang any street boundary at a height less than 2.5 m above the roadway; and
 - (iii) be provided with drainage to prevent rainwater or condensate falling onto or running across the footpath, unless either it is a retractable awning in the nature of a sun blind, or unless the total catchment area for run-off is less than 1.5 m².

- (b) A balcony or awning that overhangs a street boundary-
- (i) must not extend closer than 450 mm to the kerb of the roadway; and
 - (ii) must be constructed of *non-combustible* or fire-retardant materials throughout, except that timber battens may be used to support the soffit lining.

SECTION I MAINTENANCE

PART 11 EQUIPMENT AND SAFETY INSTALLATIONS

Delete I1.1 and insert SA I1.1 as follows:

SA I1.1 Safety installations

- (a) Safety installations in buildings must be maintained.
- (b) Regulation 76 of the Development Act 1993 sets out requirements for the maintenance of Essential Safety Provisions in buildings.

APPENDIX

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TASMANIA

INTRODUCTION

The Tasmania BCA Appendix includes variations from the requirements of the 1996 edition of the Building Code of Australia (BCA) and additional requirements resulting from the consolidation in Tasmania of all building-related regulations into the BCA.

The variations from the requirements of the BCA apply to the construction or alteration of all buildings in Tasmania and the extra requirements apply to all workplaces and special-use buildings.

TASMANIA - BCA APPENDIX

CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application in Tasmania as follows:

A - GENERAL PROVISIONS

Tas Specification A1.3
Standards Adopted by Reference

C - FIRE RESISTANCE

Tas CP10 Performance Requirements
Tas C1.0 Deemed-to-Satisfy Provisions
Tas C1.101 Non-combustible roofing

D - ACCESS AND EGRESS

Tas Table D1.13
Area per person according to use

E - SERVICES AND EQUIPMENT

Tas EO1 Objective
Tas EF1.2 Functional Statements
Tas EP1.7 Performance Requirements
Tas E1.0 Deemed-to Satisfy Provisions
Tas E1.101 Fire detection and alarm system

F - HEALTH AND AMENITY

Tas F1.7 Waterproofing of wet areas in buildings
Tas F2.101 Non-flushed urinals
Tas F2.102 Installation of closet fixtures
Tas F4.101 Fixed natural ventilation

G - ANCILLARY PROVISIONS

Tas GO1 Objective
Tas GF1.4 to GF1.6
Functional Statements
Tas GP1.5 to GP1.9
Performance Requirements
Tas G1.0 Deemed-to-Satisfy Provisions
Tas G1.1 Swimming pools
Tas G1.2 Refrigerated chambers, strong rooms and vaults

Continued

Contents continued**Tas Part G101 PROJECTIONS OVER WAYS**

- Tas G101.1 Construction and location of projections over ways
- Tas G101.2 Protection of ways

H - SPECIAL USE BUILDINGS

Objectives

Tas Part H101 WORKPLACES

- Tas H101.1 Application of Part
- Tas H101.2 Floor area
- Tas H101.3 Floor surfaces
- Tas H101.4 Floor drainage
- Tas H101.5 Floor covering
- Tas H101.6 Overhead clearance
- Tas H101.7 Lighting
- Tas H101.8 Ventilation
- Tas H101.9 Toilet facilities
- Tas H101.10 Hand washing facilities
- Tas H101.11 Shower facilities
- Tas H101.12 Change rooms
- Tas H101.13 Dining rooms
- Tas H101.14 Rest rooms
- Tas H101.15 First aid and health
- Tas H101.16 Doors

Tas Part H102 FOOD PREMISES

- Tas H102.1 Application of Part
- Tas H102.2 Meat premises
- Tas H102.3 Floors, walls and ceilings
- Tas H102.4 Food stores
- Tas H102.5 Pests and contaminants
- Tas H102.6 Washbasins
- Tas H102.7 Glass washing apparatus
- Tas H102.8 Sinks
- Tas H102.9 Installation of equipment and fittings
- Tas H102.10 Drains
- Tas H102.11 Concealment of pipes
- Tas H102.12 Storage of materials and equipment
- Tas H102.13 Separation of work place
- Tas H102.14 Offensive material and trade waste
- Tas H102.15 Mechanical ventilation of kitchens
- Tas H102.16 Dairy produce
- Tas H102.17 Refrigerated and cooling chambers

Continued

Contents continued**Tas Part H103 DINING ROOMS AND BAR ROOMS**

- Tas H103.1 Application of Part
- Tas H103.2 Number of persons accommodated
- Tas H103.3 Access
- Tas H103.4 Sanitary facilities
- Tas H103.5 Insect proofing
- Tas H103.6 Separation from other areas

Tas Part H104 BOTTLE SHOPS AT LICENSED PREMISES

- Tas H104.1 Application of Part
- Tas H104.2 Drive-in bottle shops

Tas Part H105 ACCOMMODATION FACILITIES

- Tas H105.1 Application of Part
- Tas H105.2 Definitions
- Tas H105.3 Floor area of bedrooms
- Tas H105.4 Eating areas
- Tas H105.5 Cooking areas
- Tas H105.6 Sanitary facilities in suites and units
- Tas H105.7 Sanitary facilities in individual caravan sites
- Tas H105.8 Communal sanitary facilities
- Tas H105.9 Laundry facilities
- Tas H105.10 Floors of sanitary and laundry facilities
- Tas H105.11 Insect proofing
- Tas H105.12 Doors on accommodation facilities

Tas Part H106 MEAT PREMISES

- Tas H106.1 Application of Part
- Tas H106.2 Premises Processing Animals
- Tas H106.3 Premises Processing Meat

Tas Part H107 DAIRIES

- Tas H107.1 Application of Part
- Tas H107.2 Performance Requirement: Walls and floors
- Tas H107.3 Deemed-to-Satisfy Provisions: Walls and floors
- Tas H107.4 Performance Requirement: Milk storage area
- Tas H107.5 Deemed-to-Satisfy Provisions: Milk storage area
- Tas H107.6 Water supply

Tas Part H108 PHARMACIES

- Tas H108.1 Application of Part
- Tas H108.2 Definition
- Tas H108.3 Pharmacy premises
- Tas H108.4 Dispensary
- Tas H108.5 Security of dispensary

Continued

Contents continued**Tas Part H109 HOSPITALS AND NURSING HOMES**

- Tas H109.1 Application of Part
- Tas H109.2 Floor area of wards
- Tas H109.3 Floors and walls
- Tas H109.4 Grab rails
- Tas H109.5 Insect proofing
- Tas H109.6 Water temperature

Tas Part H110 PREMISES USED FOR ACTIVITIES INVOLVING SKIN PENETRATION

- Tas H110.1 Application of Part
- Tas H110.2 Sanitary facilities
- Tas H110.3 Washbasins

Tas Part H111 DENTAL SURGERIES AND CHIROPRACTORS PREMISES

- Tas H111.1 Application of Part
- Tas H111.2 Waiting room
- Tas H111.3 Floor, walls and ceiling
- Tas H111.4 Disposal of liquid wastes

Tas Part H112 MORTUARIES

- Tas H112.1 Application of Part
- Tas H112.2 Layout of mortuary
- Tas H112.3 Construction of body preparation room
- Tas H112.4 Water supply and sewerage

Tas Part H113 FOUNDRIES

- Tas H113.1 Application of Part
- Tas H113.2 General
- Tas H113.3 Cupola charging platform
- Tas H113.4 Deep moulds and pits
- Tas H113.5 Pot furnaces

Tas Part H114 PREMISES FOR MANUFACTURING OR PROCESSING OF GLASS REINFORCED PLASTICS

- Tas H114.1 Application of Part
- Tas H114.2 Separation from other buildings
- Tas H114.3 Rise in storeys
- Tas H114.4 Maximum floor areas
- Tas H114.5 Required exits
- Tas H114.6 Hand laminating and spray depositing
- Tas H114.7 Ventilation
- Tas H114.8 Smoke and heat roof vents

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Contents continued**Tas Part H115 PREMISES FOR PRODUCTION OR PROCESSING OF ISOCYANATES**

- Tas H115.1 Application of Part
- Tas H115.2 Areas of workplaces
- Tas H115.3 Separation from other areas and buildings
- Tas H115.4 Rise in storeys
- Tas H115.5 Maximum floor areas
- Tas H115.6 Required exits
- Tas H115.7 Bulk store for polyols and isocyanates
- Tas H115.8 Curing rooms

Tas Part H116 PREMISES FOR ELECTRO-PLATING, ELECTRO-POLISHING, ANODISING OR ETCHING

- Tas H116.1 Application of Part
- Tas H116.2 Floors
- Tas H116.3 Height of plating area
- Tas H116.4 Air space
- Tas H116.5 Ceiling construction

Tas Part H117 PREMISES FOR LEAD PROCESSING

- Tas H117.1 Application of Part
- Tas H117.2 Floors
- Tas H117.3 Height of lead processing areas
- Tas H117.4 Air space and floor space
- Tas H117.5 Interior of lead processing areas
- Tas H117.6 Dust collection
- Tas H117.7 Isolation of certain processes
- Tas H117.8 Drying room shelves
- Tas H117.9 Washing facilities
- Tas H117.10 Change rooms

Tas Part H118 BOOTHS FOR SPRAY PAINTING OR SPRAY COATING

- Tas H118.1 Application of Part
- Tas H118.2 Structure of booths
- Tas H118.3 Emergency exits
- Tas H118.4 Doors
- Tas H118.5 Exhaust systems
- Tas H118.6 Ducts or flues of spray-bake booths

Continued

Contents continued**Tas Part H119 ELECTRICITY DISTRIBUTION SUBSTATIONS**

- Tas H119.1 Application of Part
- Tas H119.2 Building-type substations

Tas Part H120 PREMISES FOR STORAGE OF DANGEROUS GOODS

- Tas H120.1 Application of Part
- Tas H120.2 Interpretation
- Tas H120.3 Class of dangerous goods
- Tas H120.4 Premises for storage of dangerous goods
- Tas H120.5 Workrooms
- Tas H120.6 Exits
- Tas H120.7 Explosion vents
- Tas H120.8 Spill collection bunds
- Tas H120.9 Electrical equipment

Tas Part H121 HAIRDRESSERS' PREMISES

- Tas H121.1 Application of Part
- Tas H121.2 Size of operating section
- Tas H121.3 Premises in a residence
- Tas H121.4 Sanitary facilities
- Tas H121.5 Lighting

SECTION A GENERAL PROVISIONS

PART A1 GENERAL PROVISIONS

Tas Specification A1.3

STANDARDS ADOPTED BY REFERENCE

Insert in Table 1 the following:

Tas Table 1 SCHEDULE OF REFERENCED DOCUMENTS			
No.	Date	Title	BCA Clause(s)
AS 1187	1988	Refrigerated bulk milk tanks	Tas H107.5
AS 1596	1989	LP Gas - Storage and handling Amdt 1, Nov 1990 Amdt 2, July 1991	Tas H120.4
AS 1657		Refer to Spec A1.3 Table 1	Tas H113.3
AS 1668		Refer to Spec A1.3 Table 1	Tas H102.15
AS 1680		Refer to Spec A1.3 Table 1	Tas H101.7, Tas H121.5
AS 1926 Part 3	1993	Swimming pool safety Water reticulation and filtration systems	Tas G1.1
AS 1940	1993	The storage and handling of flammable and combustible liquids	Tas H120.4
AS 2022	1983	Anhydrous ammonia- storage and handling. Amdt 1, Jan 1985	Tas H120.4
AS 2187 Part 1	1984	Explosives- storage, transport and use Storage and land transport	Tas H120.4
AS 2381 Part 1	1991	Electrical equipment for explosive atmospheres - Selection, installation and maintenance General requirements Amdt 1 April 1992 Amdt 2 July 1993	Tas H120.9
Part 2	1993	flameproof enclosure d	
Part 6	1993	Increased safety e	
Part 7	1989	Intrinsic safety i	
Part 10	1989	Equipment and combustible dust (Class 11) areas Amdt 1 July 1989	

Continued

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Tas Table 1 Continued			
AS 2430		Classification of hazardous areas	Tas H120.5
Part 1	1987	Explosive gas atmospheres	
Part 2	1986	Combustible dusts	
Part 3	1991	Specific occupancies	
AS 2507	1984	The storage and handling of pesticides	Tas H120.4
AS 2714	1993	The storage and handling of hazardous chemical materials - Class 5.2 substances - Organic peroxides	Tas H120.4
AS 2927	1987	The storage and handling of liquefied chlorine gas. Amdt 1, June 1988	Tas H120.4
AS 3780		Storage and handling of corrosive substances	Tas H120.4
		Australian Standard for construction of premises processing animals for human consumption	Tas H106.2
		Australian Standard for construction of premises processing meat for human consumption	Tas H106.3
		Export Control (Processes Food) Orders	Tas H102.16
		HEC Substation Design and Construction Manual	Tas H119.1, Tas H119.2

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SECTION C FIRE RESISTANCE

PERFORMANCE REQUIREMENT

After CP9 insert performance requirement Tas CP10 as follows:

Tas CP10 a building must have *non-combustible* roof covering to reduce the spread of *fire* by air-borne embers between buildings.

Limitations
Tas CP10 does not apply to-

- (a) buildings *required* to be Type A construction; or
- (b) farm buildings complying with Specification C1.9 and Tas 101(c) and (d); or
- (c) roof coverings or canopies of PVC, Acrylic, Polycarbonate and GRP sheeting over a balcony, verandah, carport, covered way, *swimming pool*, barbecue area, or similar open structure attached to the building.

PART C1 FIRE RESISTANCE AND STABILITY

Delete C1.0 and insert Tas C1.0 as follows:

Tas C1.0 Deemed-to-satisfy Provisions

Performance Requirements CP1 to CP 9 and Tas CP10 are satisfied by complying with-

- (a) C1.1 to C1.11, Tas C1.101, C2.1 to C2.14 and C3.1 to C3.17; and;
- (b) in a building containing an *atrium*, Part G3; and
- (c) for theatres, *stages* and public halls, Part H1.

After C1.11 insert Tas C1.101 as follows:

Tas C1.101 Non-combustible roofing

- (a) Subject to B1.1 and Specification C1.1 Clause 2.4, a roof must be covered with one or a combination of the following materials:
 - (i) Metal sheeting or tiles.
 - (ii) Slates.
 - (iii) Terracotta or cement roofing tiles.
 - (iv) Cement fibre sheeting or shingles.
 - (v) Asphalt shingles.
 - (vi) Built-up roofing covered with *non-combustible* material.
 - (vii) Concrete, granolithic, terrazzo, cement mortar, or other similar *non-combustible* materials.
- (b) If a roof covering is *required* to be *non-combustible*, rooflights or the like installed in that roof must-
 - (i) have an aggregate area not more than 20% of the roof surface; and
 - (ii) be not less than 3 m from-
 - (aa) any boundary of the allotment other than the boundary with a road or public place; and
 - (bb) any part of the building which projects above the roof unless that part has the FRL *required* of a *fire wall* and any openings in that part of the wall for 6 m vertically above the rooflight or the like are protected in accordance with C3.4; and

- (cc) any rooflight or the like in an adjoining *sole-occupancy unit* if the walls bounding the unit are *required* to have an FRL; and
- (dd) any rooflight or the like in an adjoining fire-separated section of the building; and
- (iii) if a ceiling with a *resistance to the incipient spread of fire* is *required*, be installed in a way that will maintain the level of protection provided by the ceiling to the roof space.

SECTION D ACCESS AND EGRESS

PART D1 PROVISION FOR ESCAPE

In Table D1.13, delete references to-

Bar, cafe, church, dining room	1
Kitchen, laboratory, laundry	10

and insert references as follows:

Tas TABLE D1.13 AREA PER PERSON ACCORDING TO USE	
Type of use	m ² per person
Bar room	0.5
Cafe, church, dining room	1
Kitchen, bar service area, food service area	10
Laboratory, laundry	10

SECTION E SERVICES AND EQUIPMENT

PART E1 FIRE FIGHTING EQUIPMENT

OBJECTIVES

After EO1(d) insert objective Tas EO1(e) as follows:

Tas EO1(e) limit property and environmental damage caused by a fire.

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FUNCTIONAL STATEMENTS

After EF1.1 insert functional objective Tas EF1.2 as follows:

Tas EF1.2 A building is to be provided with a system to alert the *fire brigade* of a fire in the building.

PERFORMANCE REQUIREMENTS

After EP1.6 insert performance requirements Tas EP1.7 as follows:

Tas EP 1.7 An automatic fire detection system must be installed to alert the *fire brigade* of fire so that fire fighting operations may be undertake at the earliest possible time appropriate to-

- (a) the building functions and use; and
- (b) the fire hazard; and
- (c) the height of the building; and
- (d) the building floor area.

Limitation:

Tas EO1(e), Tas EF1.3 and Tas EP1.7 only applies to:

- (a) a Class 5 building or Class 6 building having an aggregate *floor area* of more than 1000 m²; and
- (b) a Class 7 building having a *floor area* of more than 1000 m² in which furniture is stored; and
- (c) a Class 8 building which is a special fire hazard building and in which more than 25 persons are employed; and
- (d) a Class 9b building which is a *school* or *early childhood centre* or a creche which-
 - (A) is of more than 1 *storey*, or
 - (B) has a *storey* with a *floor area* more than 500 m²; and
- (e) a Class 9b building which is a theatre.

Delete E1.0 and insert Tas E1.0 as follows:

Tas E1.0 Deemed-to-satisfy Provisions

Performance Requirements EP1.1 to EP 1.6 and Tas EP1.7 are satisfied by complying with E 1.1 to E1.10 and Tas E1.101.

After E1.10 insert Tas E1.101 as follows:

Tas E1.101 Fire detection and alarm system

An *automatic* fire detection and alarm system must comply with Clause 4 and 7 of Specification E2.2a.

SECTION F HEALTH AND AMENITY

PART F1 DAMP AND WEATHERPROOFING

After F1.7(b) insert Tas F1.7(c), (d) and (e) as follows:

Tas F1.7 Water proofing of wet areas in buildings

- (c) Where slab and stall type urinals are installed:
- (i) The floor in front of a slab or stall type urinal must be surfaced with suitable impervious material for a width of not less than 1.5 m and must be graded to the urinal channel and the remainder of the floor must be of the same or other impervious material graded to drain to a trapped outlet.
 - (ii) A step may be installed in front of a slab or stall type urinal where structural or other constraints make such installation necessary.
 - (iii) Where a step is installed it must be surfaced with suitable impervious material and must be graded to the urinal channel and the remainder of the floor must be of the same or other suitable material graded to drain to a trapped outlet.
 - (iv) The surfacing referred to in (i) must be of sufficient thickness to cover the channel edge of the urinal by not less than 25 mm.
- (d) Where wall-hung urinals are installed:
- (i) The wall must be surfaced with impervious material extending from the floor to 50 mm above the top of the urinal and at least 225 mm on each side of the urinals.

- (ii) The floor must be surfaced with impervious material extending at least 400 mm beyond the front of the urinal and at least 225 mm on each side of the urinal and graded to drain over impervious material to a trapped outlet.
- (e) In framed buildings - A room containing a urinal, if it has timber or steel framed walls must have the impervious flooring continued up the walls to a height of not less than 100 mm.

PART F2 SANITARY FACILITIES

After F2.8 insert Tas F2.101 as follows:

Tas F2.101 Non-flushed urinals

Non-flushed urinals not connected to a sewerage system must comply with Tas F2.102.

After Tas F2.101 insert Tas F2.102 as follows:

Tas F2.102 Installation of closet fixtures

- (a) If a sufficient sewerage system is not available, an authorised alternative means of disposal of sewage, may be installed.
- (b) If sanitary facilities are not water-flushed, the following provisions apply.
 - (i) A pit latrine, an incinerating toilet, a chemical toilet, a removable pan or a non-flushing urinal must not be within 2 m of a building containing habitable rooms.
 - (ii) The floor on which a removable pan is placed must be impervious.
 - (iii) A room containing a composting toilet must be separated from habitable rooms by way of a permanently ventilated air lock (which may be a circulation space).
 - (iv) The minimum ventilation *required* under (iii) shall be the greater of-
 - (A) 8000 mm²; or
 - (B) 1/500th of the *floor area* of the circulation space.

- (v) Access for maintenance or removal of waste from a composting toilet must be by way of an access door which opens directly to the outside of the building.

PART F4 LIGHT AND VENTILATION

After F4.11 insert Tas F4.101 as follows:

Tas F4.101 Fixed natural ventilation

- (a) Except if mechanical ventilation or air-conditioning is provided, in rooms and areas listed in Tas Table F4.101, a fixed opening, of aggregate size not less than that shown in the Table, must be provided in addition to any adjustable opening.

Tas TABLE F4.101 FIXED NATURAL VENTILATION		
Building Class	Room to be ventilated	Size of fixed opening/floor area
2, 3 and 4	(i) Common stairways	1/500
	(ii) Communal laundries	1/500
7	(i) Rooms for storage of polluting or noxious substances	1/350
8	All rooms	1/500 *
9a	Store rooms	1/500
9b	(i) Assembly halls in <i>schools</i>	1/250
	(ii) Workshops in <i>schools</i>	1/250
Other than Class , 2, 4	(i) Pantries for food preparation rooms	1/500
	(ii) Washrooms	1/500*
	(iii) Sanitary compartments	1/350 *
	(iv) Locker, meal and change rooms	1/500*
	(v) Boiler rooms	1/500*
	(vi) Plant, machinery rooms	1/250*
	(vii) Electrical switchboard rooms	1/250*
	(viii) Battery rooms (other than lead acid)	1/500*

Note: Not less than half of the fixed natural ventilation must be provided as high in the room as possible but not less than 2 m above the floor.

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- (b) Fixed natural ventilation may be provided by means of
 - (i) openings in walls, clear of obstructions other than louvres or grilles; or
 - (ii) ceiling ventilators, including skylights and roof ventilators.
- (c) Where a fixed ventilation opening is associated with a duct, that duct must have a clear open way at least twice the *required* area of the opening.
- (d) Openings for fixed natural ventilation must be placed so as to let air out and, if the air entering by or around doors or by other openings is insufficient for adequate ventilation, additional openings for the entry of air must be provided.

SECTION G ANCILLARY PROVISIONS

PART G1 MINOR STRUCTURES AND COMPONENTS

OBJECTIVES

After GO1(d) insert objective Tas GO1(e), (f) and (g) as follows:

- Tas GO1(e)** safeguard people from illness or injury arising from the use of a *swimming pool*.
- Tas GO1(f)** safeguard people from illness or injury when using a way.
- Tas GO1(g)** protect a way.

FUNCTIONAL STATEMENTS

After GF1.3 insert functional statements Tas GF1.4, Tas GF1.5 and Tas GF1.6 as follows:

- Tas GF1.4** *Swimming pools* must provide for the health and safety of swimmers and others.
- Tas GF1.5** Projections over ways must not pose a danger to persons using the way nor to adjoining buildings.
- Tas GF1.6** Buildings located adjacent to a way must not unduly affect the integrity of the way.

PERFORMANCE REQUIREMENTS

After GP1.4 insert performance requirements Tas GP1.5 to Tas GP1.9 as follows:

- Tas GP1.5** *Swimming pools* must be suitable and safe to use and be provided with appropriate facilities.
- Tas GP1.6** Projections over ways must be constructed and located to provide safe passage along the way and reduce the spread of fire and the potential for collapse.
- Tas GP1.7** Roofs of buildings and attachments to buildings must not allow stormwater to reach the way except by way of a drain.
- Tas GP1.8** Excavations must be protected to prevent any part of a way from subsiding into them.
- Tas GP1.9** Footings of a building must not project on to a way except if they are at sufficient depth.

Limitations

Tas GP1.5 does not apply to a *swimming pool* associated with a Class 2 building.

Delete G1.0(b) and insert Tas G1.0(b) as follows:

Tas G1.0(b) Deemed-to-satisfy Provisions

Performance Requirements GP1.2 to GP 1.4 and Tas GP1.5 to Tas GP1.9 are satisfied by complying with G1.1 and G1.2.

After G1.1(b) insert Tas G1.1(c) to (i) as follows:

Tas G1.1 Swimming pools

- (c) *Swimming pools* for the use of the public, a club, or an association, or in connection with Class 3,5, 6, 7, 8 or 9 buildings must-
- (i) be constructed of durable materials with smooth finishes;
 - (ii) have sides vertical;
 - (iii) in that part of the pool where the water depth is not more than 1.5 m, have the bottom or floor slope not steeper than 1 vertical to 15 horizontal;

- (iv) have the depth of water marked clearly and conspicuously on each side of the pool (at the shallow end and at the deep end);
 - (v) not have diving boards installed where the water depth is less than 3.5 m;
 - (vi) have scum-gutters with opening not less than 150 mm if they are to provide hand-holds; and
 - (vii) have the floor or bottom of the pool, except for the guide lines, of such colours that the light reflectance is not less than 60%.
- (d) For a public *swimming pool* or pool in which competitions are held-
- (i) all steps into the pool must be recessed;
 - (ii) fittings must not project into the water area;
 - (iii) piping must not be bracketed to the sides to provide hand-holds;
 - (iv) surrounding concourses must be provided not less than 2 m wide, with a suitable non-slip surface, graded away from the pool and drained to waste; and
 - (v) dressing rooms with sanitary accommodation must be so located that bathers pass through that accommodation enroute to the *swimming pool*.
- (e) If the volume of a *swimming pool* exceeds 15 m³-
- (i) an adequate water recirculation, disinfection and filtration system must be installed;
 - (ii) the inlet and outlet openings in a swimming pool for the purpose of water recirculation must be so located that water movement is continuous from inlet to outlet;
 - (iii) inlet and outlet openings, and skimmer boxes where provided, must comply with AS 1926.3;
 - (iv) recirculation of water in a *swimming pool* must be so designed that the pool contents are recirculated not less than once in the period shown in Tas Table G1.1(e); and
 - (v) water filtration rates must not exceed 12 250 L/m² of sand filter bed per hour, or an equivalent rate in other filter media.

**Tas TABLE G1.1(e)
RECIRCULATION OF WATER IN SWIMMING POOLS**

Pool Type	Period
Outdoor <i>Swimming pool</i>	6 hours
Indoor <i>Swimming pool</i>	4 hours
Wading Pool	2 hours

- (f) Chlorine and chlorination equipment must be stored in an area or room separate from any part of the premises used by the public.
- (g) A chlorination room-
- (i) must be built or shielded to avoid penetration by direct sunlight;
 - (ii) must not be in direct or indirect contact with any ventilation system serving any other part of the building;
 - (iii) must be located to avoid transfer of heat for many boiler or furnace;
 - (iv) must be provided with ventilation within 300 mm from the floor and 300 mm from the ceiling in the ratio, in each location, of not less than 1/150 of its *floor area*;
 - (v) must be provided with a clear glass *window* of such size and in such a position as will enable the operator working in any position inside the room to be observed from the outside;
 - (vi) must be provided with a door opening outwards and fitted with such fastenings as will ensure that the door can be opened easily from the outside or the inside without the use of a key while the operator is in the room; and
 - (vii) must be provided with a cabinet of the "break-the-glass" type on the outside, near to the door, for the purpose of holding a gas-mask intended for use in rescue work.
- (h) Where no other suitable sanitary accommodation is provided sanitary facilities must be provided in accordance with Tas Table G1.1(h).

Tas TABLE G1.1(h) SANITARY FACILITIES AT SWIMMING POOLS						
Maximum Number Served by -						
	Closet Fixtures		Urinals		Wash Basins	
	1	Each Extra	1	Each Extra	1	Each Extra
Males	60	60	60	60	60	60
Females	40	40	-	-	60	60

- (i) Where no other suitable shower facilities are provided, showers must be provided so that each shower serves up to 40 persons.

Delete G1.2 and insert Tas G1.2 as follows:

Tas G1.2 Refrigerated chambers, strong rooms and vaults

- (a) A refrigerated chamber or cooling chamber which is of sufficient size for a person to enter must have-
 - (i) an escape door with a clear width not less than 600 mm and a clear height not less than 1.5 m and able to be opened from inside without a key;
 - (ii) a pilot light or illuminated sign clearly indicating the position of each escape door;
 - (iii) an external continuous or intermittent warning light or a buzzer bell, operated by chains or illuminated buttons suspended or fixed inside the chamber near each door, and positioned near each door so as to be visible or audible at a constantly manned place.
 - (iv) an indicator lamp positioned outside the chamber which is illuminated when the interior lights of the chamber are switched on by a switch conveniently located inside the chamber.
- (b) A strong room or vault in a building must have-
 - (i) internal lighting controllable only from within the room or vault;
 - (ii) a pilot light located outside the room or vault but controllable only by the switch for the internal lighting; and
 - (iii) a suitable alarm device located outside but controllable only from within the chamber, room or vault.

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- (d) Doors of refrigerated chambers, cooling chambers, strong rooms or vaults which are operated electrically or pneumatically must be capable of being opened by hand.

After Part G5 insert Tas Part G101 as follows:

TAS PART G101 PROJECTIONS OVER WAYS

Tas G101.1 Construction and location of projections over ways

- (a) In this Part the following meanings apply:

Awning means a cover projecting from a building to provide shelter or shade for people outside the building.

Balcony means a permanent projection from a building, designed to be walked, stood or sat on, and which is not roofed.

Kerb-line means the line of the carriageway edge of the kerb or, where there is no kerb, the line of the carriageway edge of the kerb if there was one.

Verandah means a permanent, roofed projection from a building, designed to be walked, stood or sat on.

Way includes a public road, street, alley or footpath.

- (b) every bridge connecting buildings over a *way* must be of *non-combustible* material.
- (c) Every *awning* and balcony which projects over a *way* must be supported entirely from the building to which it is attached.
- (d) A *verandah* must not project over a *way*.
- (e) Every part of a building which projects over a *way* must comply with Tas Table G101.1.

Tas TABLE G101.1 PROJECTIONS OVER WAYS	
Heights above ground or footpath level:	
<i>Awnings</i>	2.7 m
Shades or sunblinds (when not in use), signs, lamps or the like.	2.4 m
Other projections	3.0 m
Maximum Distance of projection over a way:	
<i>Awnings-</i>	
(i) <i>non-combustible</i>	not beyond a line 450 mm from the plumb of the kerb-line
(ii) <i>combustible</i>	1.0 m
<i>Balconies-</i>	1.0 m
<i>Other projections-</i>	
(i) in streets more than 15 m wide	900 mm
(ii) in streets not more than 15 m wide	600 mm
Note :	
(i)	A door, gate, <i>window</i> , sash, or shutter is not deemed to open outwards unless, when open to its utmost extent, some part of it projects beyond the boundary line of the <i>way</i> .
(ii)	The total width of all the oriel <i>windows</i> and turrets projecting onto a <i>way</i> in any wall of any <i>storey</i> of a building, taken together, must not exceed 3/5 of the length of that wall on the level of that <i>storey</i>

(f) Any *combustible awning* which projects over *away* must not extend to within 1.5 m of an adjoining building.

After Tas G101.1 insert Tas G101.2 as follows:

Tas G101.2 Protection of ways

- (a) Every roof of a building, and every *verandah*, balcony, or other similar projection or projecting *window* must be so designed and built as to prevent stormwater from it from dropping on, running over, or seeping under any *way*.
- (b) The roof of any *awning* that extends more than 1.0 m over a *way* must be drained to a down pipe.
- (c) Down-pipes from *awnings-*
 - (i) must not project beyond the boundary of a *way*; and

- (ii) must be of steel or provided with a protective cover to a height of 2 m from the path.
- (d) Any excavation must be protected, by shoring or otherwise, as necessary to prevent subsidence into the excavation of any part of a way adjoining it.
- (e) Footings must not extend beyond the boundary of a way other than as shown in Tas Table G101.2.

Tas TABLE G101.2 PROJECTION OF FOOTINGS	
Depth of top of footing below ground level	Maximum permissible projection
Less than 1.3 m	Nil
1.3 m to 3.0 m	450 mm
Exceeding 3.0 m	750 mm

SECTION H SPECIAL USE BUILDINGS

OBJECTIVES

Insert Objectives for Tas Part H101 as follows:

Tas Part H101 Workplaces

Every workplace must be constructed in a manner that will provide for the safety, health and welfare of workers using that workplace.

Insert Objectives for Tas Part H102 as follows:

Tas Part H102 Food Premises

Each building or part of a building used as food premises must be able to be used in such a manner that food products do not become contaminated.

Insert Objectives for Tas Part H103 as follows:

Tas Part H103 Dining Rooms and Bar Services

Dining rooms and bar rooms must provide for the comfort, convenience and health of customers.

Insert Objectives for Tas Part H104 as follows:

Tas Part H104 Bottle Shops at Licensed Premises

Bottle shops, with adequate storage facilities, must provide for display of goods for sale and for shelter of customers.

Insert Objectives for Tas Part H105 as follows:

Tas Part H105 Accommodation Facilities

Accommodation facilities must provide for the comfort, convenience and security of travellers.

Insert Objectives for Tas Part H106 as follows:

Tas Part H106 Meat Premises

Meat premises must be constructed in such a manner that-

- (a) does not jeopardise animal welfare; and
- (b) provides for hygienic processing of animals; and
- (c) ensures the wholesomeness of meat and meat products.

Insert Objectives for Tas Part H107 as follows:

Tas Part H107 Dairies

Dairies must be constructed in such a manner that contamination of milk can be avoided.

Insert Objectives for Tas Part H108 as follows:

Tas Part H108 Pharmacies

Pharmacies must be able to be secured against entry and the interior must be able to be supervised by a pharmacist.

Insert Objectives for Tas Part H109 as follows:

Tas Part H109 Hospitals and Nursing Homes

Hospitals and nursing homes must be able to be easily cleaned and must have adequate space for patients.

Insert Objectives for Tas Part H110 as follows:

Tas Part H110 Premises for Activities Involving Skin Penetration

Premises for activities involving skin penetration must provide for cleanliness of staff and comfort of customers.

Insert Objectives for Tas Part H111 as follows:

Tas Part H111 Dental Surgeries and Chiropractors' Premises

Dental surgeries and chiropractors' premises must be able to be easily cleaned and must have a waiting room for patients.

Insert Objectives for Tas Part H112 as follows:

Tas Part H112 Mortuaries

Mortuaries must be constructed in a manner that will ensure the health of staff and the general public.

Insert Objectives for Tas Part H113 as follows:

Tas Part H113 Foundries

Foundries must provide for the comfort and safety of workers on the premises.

Insert Objectives for Tas Part H114 as follows:

Tas Part H114 Premises for Manufacture or Processing of Glass-reinforced Plastic

Premises for manufacture or processing of glass-reinforced plastic must-

- (a) provide for the safety and comfort of workers; and
- (b) be constructed in a manner that will avoid the spread of fire within the building and to other buildings.

Insert Objectives for Tas Part H115 as follows:

Tas Part H115 Premises for the Production or Processing of Isocyanates

Premises for the production or processing of isocyanates must-

- (a) provide for the safety and comfort of workers; and

- (b) be constructed in a manner that will avoid the spread of fire within the building and to other buildings.

Insert Objectives for Tas Part H116 as follows:

Tas Part H116 Premises for Electro-plating, Electro-Polishing, Anodising or Etching

Premises for electro-plating, electro-polishing, anodising or etching must-

- (a) provide for the safety and comfort of workers; and
 (b) be constructed in a manner that will prevent the escape of liquids and atmospheric contaminants to other areas of the building.

Insert Objectives for Tas Part H117 as follows:

Tas Part H117 Premises for Lead Processing

Premises for lead processing must-

- (a) provide for the safety and comfort of workers; and
 (b) be constructed in a manner that will minimise the lodgement of dust and must be capable of being flushed with water.

Insert Objectives for Tas Part H118 as follows:

Tas Part H118 Booths for Spray-painting or Spray-Coating

Booths for spray-painting or spray-coating must-

- (a) be constructed of *non-combustible* materials;
 (b) have adequate means of escape; and
 (c) have suitable means of extracting harmful fumes from the booth.

Insert Objectives for Tas Part H119 as follows:

Tas Part H119 Electricity Distribution Substations

Building-type electricity distribution substations must be housed in buildings that are tamper-proof, vermin-proof and weatherproof, and have adequate means of escape.

Insert Objectives for Tas Part H120 as follows:

Tas Part H120 Premises for Storage of Dangerous Goods

Premises for storage of dangerous goods must-

- (a) provide for the safety and comfort of workers in the premises; and
- (b) be constructed so as not to be a danger to other people or buildings.

Insert Objectives for Tas Part H121 as follows:

Tas Part H121 Hairdresser's Premises

Hairdresser's premises must be of adequate size and amenity.

After Part H1 insert Tas Part H101 as follows:

PART TAS H101 WORKPLACES

Tas H101.1 Application of Part

This Part is applicable to every building or part of a building used as a workplace to which the *Industrial Safety, Health and Welfare (Administrative and General) Regulations 1979* apply.

Tas H101.2 Floor area

- (a) The *floor area* of each office must be 7 m² or sufficient to provide 4 m² for each occupant, whichever is the greater.
- (b) Each floor plan dimension of any room which is a workplace must be greater than 2.5 m.

Tas H101.3 Floor surfaces

- (a) Every floor in a work place must have an even, unbroken slip-resistant surface, free from holes, indentations, projections or other obstructions that might create tripping or stumbling hazards.
- (b) Where the nature of the process is such that spillage of liquids is likely to occur, or where it is necessary for the floors to be cleansed with water or other liquids-
 - (i) the floors must be surfaced with materials that are impervious to the penetration of liquids likely to be spilt or used in the process of cleaning; and
 - (ii) the joints between the floors and the walls must be sealed with an impervious material and finished in such a manner that the joint is concavely rounded.

Tas H101.4 Floor drainage

- (a) Floors in a workplace must be graded to drain off liquids which must be carried away and disposed of by means of open paved channels, covered drains or pipes.
- (b) Floors graded as shown in Tas Table H101.4 satisfy (a).

Tas TABLE H101.4 SLOPES OF FLOORS FOR DRAINAGE	
Wash (or hose-down) areas	1:25
Wet (or mop-down) areas	1:50
Dry areas	1:100

- (c) Where the effluent from drains is likely to be offensive it must be intercepted by suitable deodorising tanks.
- (d) Wherever practicable, drains to carry off spilt liquids should be planned so that the liquids are intercepted close to the point of spillage and not allowed to spread over the working surface of the floor.

Tas H101.5 Floor covering

- (a) Where workers stand in substantially the one location while working on a floor of brick, metal, stone or other similar material, those floors or sections thereof, must be covered with-
 - (i) wood, rubber, linoleum, resilient types of plastic tiles;
 - (ii) suitable compositions containing asphalt, rubber, cork, magnesite; or
 - (iii) other semi-resilient, thermally non-conductive materials on which the workers may stand.
- (b) Fixed coverings for local sections of floors must be inset flush with the main floor.

Tas H101.6 Overhead clearance

Pipes, fixtures and similar objects running above a passage or walkway must be fixed at a height to provide a clear distance not less than 2.1 m measured from the floor to the lowest part of the object.

Tas H101.7 Lighting

Workplaces must be designed so that artificial lighting can, without structural alteration, be made to comply with AS 1680.

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Tas H101.8 Ventilation

- (a) Every workplace must be ventilated to remove offensive gases, vapours, fumes, dust or other airborne impurities.
- (b) The discharge from mechanical ventilation must be constructed to prevent recirculation of the impurities.

Tas H101.9 Toilet facilities

- (a) Where practicable, toilet facilities must be located in the same building as the workplace or change room that they serve.
- (b) Toilet facilities which are not located in the same building as the workplace they serve must-
 - (i) be sited within the boundary of the premises;
 - (ii) be housed in a fully roofed and clad building;
 - (iii) be located at a distance not greater than 100 m from any workplace they serve; and
 - (iv) have provided, at every entrance doorway giving direct access to the interior of the building, a full length door fitted with a suitable locking device.
- (c) Every closet must be fitted with a door capable of being fastened on the inside.

Tas H101.10 Hand washing facilities

- (a) Hand washing facilities must be located in change rooms or in wash rooms accessible to change rooms and must be placed where they can be conveniently used by persons before eating meals and after using toilet facilities.
- (b) Where hand washing facilities are located in a change room, the *floor area* allowed for the change room must be increased by the area *required* for the washing equipment and its use.
- (c) Hand washing facilities include wash basins, wash troughs and circular ablution fountains.

Tas H101.11 Shower facilities

- (a) Where the work engaged upon is such that a change of clothing is necessary, showers with hot and cold running water must be provided at the rate of not less than shown in Tas Table H101.11.

**Tas TABLE H101.11
SHOWERS IN WORK PLACES**

Hot, arduous or dirty industries :	1 for every 15 employees
Light, clean industries :	1 for every 25 employees

- (b) Shower rooms must be located immediately adjacent to change rooms and urinal facilities, but urinal facilities may be provided in male shower rooms.
- (c) Separate and distinct shower accommodation must be provided for male and female employees.

Tas H101.12 Change rooms

Where change rooms are *required* by the *Industrial Safety, Health and Welfare (Administration and General) Regulations*, they must comply with Tas Table H101.12.

**Tas TABLE H101.12
CHANGE ROOMS**

Minimum area of room-	
for each person requiring to change clothes:	0.5 m ²
for each person not requiring to change clothes :	0.3 m ²
Minimum free floor space-	
between lockers facing one another:	1.5 m
between locker face and a wall:	1.0 m
free floor area:	2.0 m ²

Tas H101.13 Dining rooms

- (a) In any work place which is a factory or shop a dining area or dining room must be provided as set out in Tas Table H101.13.

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**Tas TABLE H101.13
DINING AREAS AND DINING ROOMS**

For 10 or less employees: a suitable dining area separate from any working area:

Dining areas must be provided with adequate and hygienic facilities for the washing of eating utensils and for the storage of utensils where they will be protected from dust or vermin.

For more than 10 employees: a conveniently located dining room separate from any work room or work area:

Dining Rooms must be equipped with a dish washing sink supplied with hot and cold water, draining board and cupboards in which foodstuffs and crockery can be stored free from dust and vermin, except that the provision of running water shall not apply where a reticulated water service cannot be made available.

NOTE: Where up to 15 persons of the same sex are employed, a combined change room/dining room may be provided.

- (b) In buildings to be used as offices, there must be provided on each *storey*, in a location accessible to all tenants, an area containing a dish washing sink supplied with hot and cold water, cupboard storage for food stuffs and utensils, and facilities for boiling water. Such areas must not be located in toilets, wash-rooms, or change rooms.

Tas H101.14 Rest rooms

Where 20 or more females are employed, a separate rest room, with convenient access to sanitary accommodation, must be provided in accordance with Tas Table H101.14.

**Tas TABLE H101.14
FLOOR AREAS OF REST ROOMS**

<i>m² of floor area:</i>	6	9	12	15	Each extra 3
Max. number of females served:	100	200	300	400	200

NOTE: Where a first aid room or health centre is provided the rest room may be adjacent to it or part of it.

Tas H101.15 First aid rooms and health centres

Unless *required* otherwise under *Industrial Safety, Health and Welfare (Administration and General) Regulations 1979*

- (a) in every workplace, other than a shop or office, where the number of employees working on the premises exceeds 300 at any time, a self-contained health centre must be provided, at ground level if practicable, with *floor area* not less than 45 m², which includes-

- (i) treatment room with a *floor area* of at least 14 m²;
 - (ii) separate waiting room;
 - (iii) separate recovery room;
 - (iv) separate combined office and consulting room;
 - (v) toilet with air lock and washbasin with clean, hot and cold, running water;
 - (vi) store room or adequate storage cupboards; and
 - (vii) walls, floors and ceilings impervious to moisture, easy to clean, free from cracks, ledges and sharp angles and finished in a light colour.
- (b) In every workplace where the number of employees exceeds 150 at any time and where a health centre has not been provided, a first aid room must be provided, suitably located with convenient access, readily accessible to sanitary accommodation, having a *floor area* not less than 14 m² and clearly marked "FIRST AID".

Tas H101.16 Doors

- (a) **Roller-shutter door:** Every power operated, roller-shutter door must be fitted with a continuous-pressure, manual switch for control of downward movement.
- (b) **Automatic-closing doors:** A suitable switch, controlled by a photo-electric device, must be fitted to stop or reverse the closing travel if a person or object should obtrude into the line of travel of the closing door.
- (c) **Sliding-door:** Every sliding door must be installed in such a manner that it will not derail or over-run its normal travel.

After Tas Part H101 insert Tas Part H102 as follows:

TAS PART H102 FOOD PREMISES

Tas H102.1 Application of part

- (a) This part applies to all premises, rooms, compartments or places used in relation to the manufacture, preparation, storage, packing, carriage or delivery of food for sale and to which the following apply-
 - (i) *Public Health (Food Hygiene) Regulations, 1977*; or
 - (ii) *Liquor and Accommodation Act 1990*.
- (b) Premises to which this Part applies include, but are not limited to-
 - (i) bakehouses;

- (ii) bar service areas;
 - (iii) premises for boning, curing, canning, mincing, pre-packing or other similar process of preparation of meat for sale;
 - (iv) butcher's shops;
 - (v) eating houses and tea shops;
 - (vi) fish shops;
 - (vii) kitchens in eating houses, restaurants, guest-houses, motels and hotels;
 - (viii) rooms for processing, manufacturing, packing, etc of dairy products, ice blocks, ices, meat-for-sale, shell-fish, or other fish;
 - (ix) small goods factories;
 - (x) take-away-food stores; and
 - (xi) breweries and wineries.
- (c) This part does not apply to-
- (i) boarding houses or the like classified as Class 1 buildings; or
 - (ii) tents, buildings or other structures used temporarily for serving meals to the public at any fair, show, race meeting or other public sports, games or amusements.
 - (iii) dairies covered by Tas 107.
- (d) In this part, words and meanings as defined in the Public Health(Food Hygiene) Regulations 1977 and Liquor and Accommodation Act 1990 apply.

Tas H 102.2 Meat Premises

- (a) Premises used for the preparation or sale of red meat, other than those licensed under the Meat Hygiene Act 1985 (see Tas Part H106), must comply with-
- (i) the ARMCANZ Australian Standard for the Construction of Premises Processing Meat for Human Consumption; or
 - (ii) the Tasmanian Standard for Construction and Operation of Premises Processing and Retailing Meat and Meat Products for Human Consumption.
- (b) The provisions of Tas H102.3 - Tas H102.15 satisfy in relation to building construction the requirements of (a).

Tas H102.3 Floors, walls and ceilings

- (a) Each floor, wall and ceiling of the premises must have a surface that is -
 - (i) durable, rigid, impervious to water, non-absorbent, non-toxic and smooth enough to be easily cleaned; and
 - (ii) free from cracks, crevices and other defects.
- (b) If the floor is subject to wet cleaning by hosing down or if activities are carried out where liquids are discharged on to the floor, the floor must be graded to trapped floor waste outlets connected to a drainage installation.
- (c) Each wall must be free from skirtings, architraves, picture rails or other ledges that could provide lodgement for dirt.
- (d) All angles between the walls and the floor must be coved to permit ease of cleaning.
- (e) All angles between walls and all joints in walls must be sealed.
- (f) All walls and ceilings must be finished in light colour, and if painted, must be washable.
- (g) Sub-clauses (a), (b), (c), (d), (e) and (f) do not apply to areas used only by customers and they do not apply to walls and ceilings in a premises or place-
 - (i) used for the storage or display for sale of food that is wholly enclosed in protective packages;
 - (ii) used for the storage for sale of fruit and vegetables; or
 - (iii) in which all food for sale is completely enclosed and otherwise protected from contamination by processing plants, other appliances, or other means.

Tas H102.4 Food store

Every eating house must have a dry-food store.

Tas H102.5 Pests and contaminants

- (a) The exterior of a food premises must be constructed to exclude pests and contaminants.
- (b) Premises which are provided with-
 - (i) fly-proof, external *windows* and *self-closing* fly proof doors, or

- (ii) if customers are served outside the premises through an opening, an appliance for the elimination of flies and mechanical ventilation adequate to exhaust air through the opening at a rate of not less than 5 litres per second for each square metre of opening, satisfies (a) as it applies to insects.

Tas H102.6 Washbasins

Each premises or place for preparation or storage of food for sale must be provided with not less than one washbasin, supplied with hot and cold water, in or within reasonable proximity of those areas where the nature of the activities performed is such that hands are likely to be a source of contamination of food.

Tas H102.7 Glass washing apparatus

Every bar service area must have a suitable glass washing apparatus in accordance with Circular 330/110, dated 22 May 1984, from the Minister for Health.

Tas H102.8 Sinks

- (a) Each premises must be provided with a double bowl sink or tub of stainless steel supplied with-
 - (i) hot and cold water; and
 - (ii) an integral drainer on at least one side.
- (b) If a sink is installed adjacent to a wall or other vertical surface, it must be fitted with an integral flashing to that wall or vertical surface to a height of not less than 150 mm.
- (c) The sink must be provided with an integral surround not less than 150 mm wide except on sides with an integral flashing as in (b).

Tas H102.9 Installation of equipment and fittings

- (a) Each item of equipment or fitting in a premises which is not capable of being moved easily must be installed-
 - (i) so that the area underneath the item can be easily cleaned; or
 - (ii) on a solid base or plinth constructed of impervious material similar to the flooring material.
- (b) A plinth must be-
 - (i) not less than 75 mm high;
 - (ii) finished to a smooth even surface and rounded at exposed edges to facilitate cleaning;
 - (iii) coved at intersections with floor and walls.

Tas H102.10 Drains

A grease trap, a gully trap or an untrapped opening connected directly with a drain or sewer, must not be installed in a room used for preparation, processing, packing or storing of food for sale.

Tas H102.11 Concealment of pipes

Where practicable, service pipes should be concealed beneath the surface of walls, floors, or ceilings, otherwise, pipes are to be fixed clear of the wall, floor, or ceiling, at such distance as to facilitate cleaning.

Tas H102.12 Storage of materials and equipment

Separate areas for the storage of fuel, cleaning compounds and general maintenance equipment must be provided so as to prevent the contamination of the product in the event of a spillage or any other form of breakdown.

Tas H102.13 Separation of work place

A room where food for sale is to be processed, manufactured, prepared, deposited, treated, stored or packed, must not have direct communication with a room containing sanitary facilities, living quarters, laundry, bathroom or garage or a room where animals are housed.

Tas H102.14 Offensive material and trade waste

If offensive material or trade waste is stored, a separate area must be provided which-

- (a) is paved and easily cleanable;
- (b) is graded to drain to a suitable drainage system;
- (c) is fitted with metal racks capable of holding storage receptacles not less than 300 mm above the paved area; and
- (d) has available a supply of water under pressure.

Tas H102.15 Mechanical ventilation of kitchens

- (a) Where cooking or extensive heating which emits greasy vapours is done in a kitchen serving an eating house, accommodation facility or take-away food store, a suitable mechanical ventilating exhaust system must be provided.
- (b) A mechanical ventilating exhaust system complying with the requirements of AS 1668.1 and AS 1668.2 satisfies (a).

Tas H102.16 Dairy produce

(a) Definition:

Dairy produce means milk, cream, butter, cheese, condensed milk, ice-cream, yoghurt and any other product of milk and includes margarine and dairy blend.

(b) Premises designed and constructed in compliance with the Export Control (Processed Food) Orders satisfy the special requirements of this code for premises to be used for the manufacture of *dairy produce*.

Tas H102.17 Refrigerated and cooling chambers

(a) All refrigerated or cooling chambers must be constructed so that stored products will not be contaminated.

(b) A refrigerated chamber or cooling chamber installed in premises for storage of food must comply with the requirements for that premises, and must have-

- (i) internal and external panels adhered directly to the insulating core material to form an integral wall section with tight fitting edges resistant to penetration by liquids; and
- (ii) every joint caulked with a water-resistant, flexible sealer and finished in such a manner as to prevent migration of liquids into the core; and
- (iii) every intersection of walls with floors and walls with walls coved with a radius not less than 25 mm; and
- (iv) exposed slot-head screws or open-headed pop rivets filled with sealer; and
- (v) service pipes and conduits concealed in floors, walls or ceilings, if practicable, or fixed on brackets to provide clearances of not less than 25 mm between the pipe and a wall and 100 mm between the pipe and a floor; and
- (vi) fittings not fixed over exposed pipes nor in a position to make difficult the cleaning of the pipe and surrounding area; and
- (vii) rat proof construction, and any inaccessible spaces between the low temperature room and surrounding walls, ceilings and fixtures proof against rats and vermin; and

(viii) floors graded, as shown in Tas Table H102.17(b)(viii), to drains located outside the chamber as near as practicable to the door opening; and

Tas TABLE H102.17(b)(viii) FLOOR DRAINAGE OF REFRIGERATED OR COOLING CHAMBERS	
FLOOR SLOPE	
Active chillers	not less than 1:50
Other chambers	not less than 1:100

(ix) drainage from cooling units within the chamber constructed in accordance with Tas Table H102(b)(ix), draining to a trapped outlet located outside the chamber.

Tas TABLE H102.17(b)(ix) DRAINAGE FROM COOLING UNITS WITHIN REFRIGERATED CHAMBERS OR COOLING CHAMBERS
<p>Wall-mounted cooling units -</p> <p>drain water must be contained and removed by either a wall-mounted channel or a spoon drain located under the coil.</p> <p>Floor-mounted cooling units -</p> <p>drain water must be confined by kerbs, of a height not less than 150 mm, and directed to a trapped drain outlet.</p> <p>Ceiling-mounted cooling units -</p> <p>drain water must be confined by suitable insulated drip trays directly connected to the drainage system.</p>

After Tas Part H102 insert Tas Part H103 as follows:

TAS PART H103 DINING ROOMS AND BAR ROOMS

Tas H103.1 Application of Part

This Part applies to-

- (a) dining rooms in eating houses as covered by the *Public Health (Food Hygiene) Regulations 1977*; and
- (b) dining rooms and bar rooms (excluding bar service areas) in licensed premises covered by the *Liquor and Accommodation Act 1990*.

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Tas H103.2 Number of persons accommodated

- (a) The number of diners in a dining room, or customers in a bar room, for whom *exits* and sanitary facilities are provided, must be calculated on the basis of-
- (i) one diner for each 1 m² of *floor area* of the dining room; and
 - (ii) one customer for each 0.5 m² of *floor area* of the bar room.
- (b) The *floor areas*, for the purpose of (a), do not include any part-
- (i) used as a dance floor;
 - (ii) used by a band, orchestra or group of persons providing entertainment for diners; or
 - (iii) set aside for display or serving food or drink, which must be calculated separately.

Tas H103.3 * * * * ***Tas H103.4 Sanitary facilities**

- (a) Separate sanitary facilities for males and females must be provided in close proximity to each dining room and bar room in licensed premises.
- (b) Where the sanitary facilities are not accessed from within the dining room or bar area, reasonable protection from the elements must be provided for the patrons.

Tas H103.5 Insect proofing

- (a) Subject to sub-clause (b) every opening *window* of a dining room must be fitted with an efficient, insect-proof *window* screen, and every exterior doorway giving access to a dining room must be fitted with an efficient, insect-proof, *self-closing* door.
- (b) A dining room, lounge and entrance hall, or other area adjacent thereto, which is fitted with appliances for the elimination of flies and insects, by electricity or otherwise, satisfies (a).

Tas H103.6 Separation from other areas

A dining room must not have direct opening to sanitary facilities, living quarters, a laundry, bathroom or garage or a room where animals are housed.

After Tas Part H103 insert Tas Part H104 as follows:

TAS PART H104 BOTTLE SHOPS AT LICENSED PREMISES

Tas H104.1 Application of Part

This Part is applicable to drive-in bottle shops at premises licensed under the *Liquor and Accommodation Act 1990* to sell liquor.

Tas H104.2 Drive-in bottle shops

A drive-in bottle shop must-

- (a) have storage area, display area and refrigeration facilities; and
- (b) provide protection from rain for persons when purchasing liquor or inspecting the range of liquor offered for sale from that bottle shop.

Add Tas Part H105 as follows:

TAS PART H105 ACCOMMODATION FACILITIES

Tas H105.1 Application of Part

This Part applies to every form of accommodation facility for travellers covered by the *Liquor and Accommodation Act 1990*.

Tas H105.2 Definitions

Bed and breakfast establishment means a guest house.

Bedroom means a room for sleeping to be occupied by one or more people travelling together and may have sanitary facilities attached to the room.

Dormitory means a room for sleeping to be occupied by-

- (a) people of the same sex; or
- (b) a family.

Tas H105.3 Floor area of bedrooms and dormitories

- (a) The *floor area* of the main *bedroom* or only *bedroom* in a *sole-occupancy unit* must be not less than 8.5 m² for the first person with additional space of 3 m² for each other person to be accommodated.
- (b) The *floor area* of any *bedroom*, other than the main *bedroom*, must be not less than-
 - (i) 7.5 m² for a room accommodating one person; or

- (ii) 9.0 m² for a room accommodating two persons; or
 - (iii) 9.0 m² for two persons, plus additional 3.5 m² for each person in excess of two accommodated in the room.
- (c) The *floor area* of a *dormitory* must be not less than-
- (i) 4.0 m² per person accommodated in beds; and
 - (ii) 2.5 m² per person accommodated in two-tiered bunks; and
 - (iii) 2.0 m² per person accommodated in three-tiered bunks.
- (d) For the purposes of (a), (b) and (c), the area occupied by an attached bathroom, toilet, living, dining, kitchenette or access area must not be included in the area of a *bedroom* or *dormitory* .
- (e) The size of *dormitories* to be provided at an accommodation facility must be on the basis of equal numbers of males and females.
- (f) This Clause does not apply to unregistrable relocatable dwellings

Tas H105.4 Eating areas

- (a) Except in Class 1b *bed and breakfast establishments*, dining rooms, where provided in accommodation facilities, for travellers must comply with the requirements of Tas Part H103.
- (b) An eating area must be provided in each *sole-occupancy unit* for which meals are provided for consumption in the unit or in which occupants prepare their own meals.
- (c) A communal eating room must be provided in each hostel or *bed and breakfast establishment* with space equivalent to 1 m² for each person who can be accommodated in that hostel or *bed and breakfast establishment*.

Tas H105.5 Cooking areas

- (a) Kitchens, attached to dining rooms or in which meals are prepared and cooked for delivery to guests or for sale to customers, must comply with the requirements of Tas Part H102.
- (b) Each holiday unit must be provided with a cooking area with space for-
 - (i) food storage;
 - (ii) a refrigerator; and

- (iii) free standing stove or wall oven and cooking top or equivalent.
- (c) Each holiday cabin must be provided with space for -
 - (i) food storage; and
 - (ii) an appliance for cooking.
- (d) Each hostel must be provided with space for-
 - (i) sufficient appliances for cooking;
 - (ii) refrigeration; and
 - (iii) food storage.
- (e) Each cooking area must be provided with an adequate supply of potable hot and cold water.

Tas H105.6 Sanitary facilities in suites and units

Each suite and holiday unit must be provided, within the suite or unit, with sanitary facilities which include-

- (a) a bath or shower or both, together or separate;
- (b) a water closet; and
- (c) a washbasin.

Tas H105.7 Sanitary facilities at individual caravan sites

Where provided at individual caravan sites sanitary facilities must include a shower cubicle, water closet and a washbasin.

Tas H105.8 Communal sanitary facilities

- (a) Communal sanitary facilities provided for travellers accommodated in a hotel or *bed and breakfast establishment* in accordance with Table F2.1, must be situated-
 - (i) conveniently in relation to the travellers' *bedrooms* for which the units are provided; and
 - (ii) in such a position as to be capable of being entered from within the premises.
- (b) Separate communal sanitary facilities must be provided for travellers of each sex accommodated in holiday cabins, hostels, *bed and breakfast establishments*, caravan parks or camping grounds in accordance with Tas Table H105.8 except that in a Class 1b *bed and breakfast establishment*, one communal sanitary facility may be provided if it serves a family or group travelling together and the proprietor has separate facilities.

- (c) For male travellers one third of closet pans may be replaced by urinals.
- (d) In calculating the numbers of facilities to be provided under (a) and (b) the following must not be included in the communal sanitary facilities to be provided for travellers -
 - (i) those provided for use by the proprietor, his family and his employees; or
 - (ii) those provided for the sole use by persons occupying accommodation or caravan sites with sanitary facilities attached.
- (e) Washbasins may be installed in a separate communal area for each sex.
- (f) Where communal toilets are located in a building separate from communal washing facilities, washbasins must be installed in the toilet building at the rate of one washbasin for each three toilets in the building.
- (g) Communal sanitary facilities for females must have adequate means for disposal of sanitary towels.

Tas TABLE H105.8 COMMUNAL SANITARY FACILITIES FOR TRAVELLERS		
Holiday cabins, hostels, <i>bed and breakfast establishments</i> , caravan parks or camping grounds-		
Max. Number of Males or Females Served by:	1	Each Extra
Closet Fixture(s)	10	15
Wash Basin(s)	10	15
Shower	10	15

Tas H105.9 Location of facilities

- (a) In a hostel, communal sanitary facilities must be situated-
 - (i) at a distance no greater than 100 m from the travellers' *bedrooms* or dormitories in the hostel in respect of which the units are provided; and
 - (ii) in such a position as to be capable of being entered from within the hostel premises.
- (b) At holiday cabins, communal sanitary facilities must be situated conveniently in relation to the cabins for which the units are provided, being in no case more than 100 m or less than 6 m from any of those holiday cabins.
- (c) In a caravan park the communal sanitary facilities must be situated-

- (i) at a distance no greater than 100 m and no less than 6 m from any caravan site; and
 - (ii) in such a position as to be entered from within the park.
- (d) In camping grounds the communal sanitary facilities must be situated-
- (i) conveniently in relation to that area of the camping ground on which caravans may be parked or tents erected; and
 - (ii) in such a position as to be entered from within the camping ground.

Tas H105.10 Doors and windows on communal facilities

- (a) Every external doorway giving direct access to the interior of a building containing a sanitary facility or a laundry, or a group of sanitary facilities or laundries must be provided with a full-length door fitted with a suitable locking device.
- (b) A doorway giving access to a bathroom, shower-cubicle, or toilet closet within a building containing communal sanitary facilities must be provided with a door of such size as to allow for adequate space to be left open between the top and bottom of the door and the head of the doorway and the floor respectively, whilst still ensuring the privacy of the user.
- (c) Each door referred to in (b) must be fitted with a suitable means of fastening to ensure the privacy of the user and must be capable of being opened from the outside in an emergency.
- (d) Every *window* serving a sanitary facility must be glazed with obscured glass.

Tas H105.11 Laundry facilities

- (a) Communal laundry facilities must be provided at the rate shown in Tas Table H105.11 for use by occupants for whom individual laundry units have not been provided.
- (b) A water supply must be capable of providing ample hot and cold, potable water to the unit.
- (c) A laundry unit must include space for-
 - (i) one washing machine;
 - (ii) one wash trough; and
 - (iii) one ironing board or ironing table.

- (d) Drying units for washed clothes must be provided with space for-
- (i) 6 m of clothes line; or
 - (ii) one heater dryer for each laundry unit.

Tas TABLE H105.11 NUMBERS SERVED BY LAUNDRY UNITS		
Units served	One Laundry unit serves	Each Extra Laundry unit serves
<i>Bedrooms</i> in hotels, motels or <i>bed and breakfast establishments</i> :	10	20
Holiday units or holiday cabins:	7	7
Sites in Caravan Parks or camping grounds:	15	20
Travellers in hostels :	30	30
Note: In calculating the number of communal units to be provided those <i>sole-occupancy units</i> with attached laundry units need not be included.		

Tas H105.12 Floors of sanitary facilities and laundry facilities

The floor of a building or part of a building containing communal sanitary facilities or communal laundry facilities must-

- (a) have an impervious, smooth, non-slip surface which must be continued up all walls to a height of 150 mm above floor level;
- (b) have the junctions between the floor and walls covered for easy cleaning;
- (c) be graded to a floor waste; and
- (d) not be painted.

Tas H105.13 Insect proofing

Every accommodation facility must be rendered insect-proof by the fitting of-

- (a) an insect-proof screen on at least one openable *window* in each room and every fireplace in that unit; and
- (b) a *self-closing* insect-proof door to every outside door way of that unit.

Tas H105.14 Doors on accommodation facilities

- (a) An external door to a *bedroom*, suite or *dormitory* must be-
 - (i) fitted with a suitable locking device; and

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- (ii) capable of being locked from inside the *bedroom*, suite or *dormitory* .
- (b) Every internal door in an accommodation facility must be fitted with latching device capable of being opened from either side in an emergency.

After Tas Part H105 insert Tas Part H106 as follows:

TAS PART H106 MEAT PREMISES

Tas H106.1 Application of Part

This Part is applicable to abattoirs, slaughter houses, poultry abattoirs, game-meat processing works and pet food works licensed under the *Meat Hygiene Act 1985*.

Tas H106.2 Premises Processing Animals

Premises used for the processing of animals for human consumption must comply with the Australian Standard for Construction of Premises Processing Animals for Human Consumption.

Tas H106.3 Premises Processing Meat

Premises used for the processing of meat for human consumption must comply with Australian Standard for the Construction of Premises Processing Meat for Human Consumption.

After Tas Part H106 insert Tas Part H107 as follows:

TAS PART H107 DAIRIES

Tas H107.1 Application of Part

This part is applicable to every dairy as covered by the *Tasmanian Dairy Industry Act 1994*.

Tas H107.2 Performance Requirement : Walls and Floors

- (a) The walls of the pit of a herringbone design milking shed must be non absorbent and easy to clean.
- (b) The floors of a cow yard and milking shed must be non absorbent, easy to clean and free-draining.

Tas H107.3 Deemed to satisfy: Walls and Floors

The requirements of Tas H107.2 are satisfied if -

- (a) the walls of the pit are constructed of well-compacted smooth finish concrete or other material sealed to be impervious to moisture;

- (b) the floors are constructed of well-compacted smooth finish concrete and graded to a drain; and
- (c) joints between wall sections and walls and floors are sealed to prevent entry of water and pests.

Tas H107.4 Performance Requirement: Milk Storage Area

A milk storage area must-

- (a) have internal surfaces that are smooth, non-absorbent, free-draining and easy to clean: and
- (b) be constructed so as to prevent the entry of dust, insects, pests, birds and animals.

Tas H107.5 Deemed to satisfy: Milk Storage Area

The requirements of H107.4 are satisfied if -

- (a) the floors are constructed of well-compacted smooth finish concrete and graded to a drain; and
- (b) the internal surfaces are smooth, sealed and washable: and
- (c) joints between wall sections and walls and floor are sealed to prevent entry of water and pests; and
- (d) all openings are fitted with doors, windows or screens that are fly-proof ; or
- (e) the milk storage area is a bulk milk storage tank which complies with AS 1187

Tas 107.6 Water supply

An adequate and suitable supply of water must be available for cleaning utensils and for cleaning the premises.

After Tas Part H107 insert Tas Part H108 as follows:

TAS PART H108 PHARMACIES

Tas H108.1 Application of Part

This Part applies to all pharmacies to which the *Pharmacy Regulations 1966* apply.

Tas H108.2 Definition

In this Part the following meaning applies-

Dispensary means the room or area within a pharmacy or other premises which a registered pharmaceutical chemist uses for the compounding or dispensing of prescriptions, medicines or drugs.

Tas H108.3 Pharmacy premises

- (a) Each premises used as a pharmacy must have-
- (i) a *dispensary* for the compounding or dispensing of drugs and for the storage of material used in dispensing;
 - (ii) space for the storage of narcotic substances and poisons as *required* by the *Poisons Regulations 1975*;
 - (iii) a place for unpacking containers or cases and goods; and
 - (iv) a room for storing merchandise not used in dispensing.
- (b) A pharmacy may have an area set aside for retailing merchandise that is not compounded or dispensed.

Tas H108.4 Dispensary

- (a) A *dispensary* must be located-
- (i) within a pharmacy in a position to enable a person in the *dispensary* to supervise the *dispensary*, storage areas for narcotic substances and poisons, the entrances to unpacking areas and areas for storing other substances, and the retail area; and
 - (ii) separate from any place where goods are unpacked or where general merchandise, not used in dispensing, is stored.
- (b) Each *dispensary* must be provided with-
- (i) a sink and drainage board of impervious material moulded or manufactured in one piece;
 - (ii) a reticulated supply of hot and a cold water capable of providing to the sink adequate quantities of water for dispensing purposes; and
 - (iii) space for a dispensing bench with a working area not less than 1.4 m².

Tas H108.5 Security of dispensary

- (a) Every *dispensary* and enclosure set aside for the storage of narcotic substances and poisons must be able to be secured against entry.
- (b) If a *dispensary* is located in a pharmacy that is capable of being secured against entry at all times while the *dispensary* is not in use, then the *dispensary* is deemed to be secured against entry.

After Tas Part H108 insert Tas Part H109 as follows:

TAS PART H109 HOSPITALS AND NURSING HOMES

Tas H109.1 Application of Part

This Part applies to every hospital or nursing home.

Tas H109.2 Floor area of wards and bedrooms

The *floor area* of each ward or bedroom must be sufficient to provide not less than-

- (a) 9 m² in a one-bed ward or bedroom; or
- (b) 7.5 m² for each patient or resident accommodated in any other ward or bedroom.

Tas H109.3 Floor and walls

- (a) The surface finish of all floors and walls within the building must have a smooth impervious and non-toxic finish.
- (b) The junctions between floors and walls must be covered for ease of cleaning.
- (c) In operating theatres, all junctions of walls with walls and of walls with ceilings must be covered.
- (d) Provided the requirements of Specification C1.10 are met, the walls and floors complying with (a) may have suitable coverings.

Tas H109.4 Grab rails and handrails

- (a) Every toilet closet, bath and shower alcove for use by patients or residents must be fitted with grab rails.
- (b) Corridors in areas used by patients or residents must be fitted with handrails.

Tas H109.5 Insect proofing

Each external opening must be fly-screened except where the openings are fitted with *self-closing* doors or with doors provided with suitable insect repellent devices.

Tas H109.6 Water temperature

The temperature of water supplied to baths and showers for patients must not exceed 50°C.

Add Tas Part H110 as follows:

TAS PART H110 PREMISES USED FOR ACTIVITIES INVOLVING SKIN PENETRATION

Tas H110.1 Application of Part

This part applies to premises for tattooing, ear-piercing, acupuncture and like activities, covered by the *Public Health (Skin Penetration) Regulations 1978*.

Tas H110.2 Sanitary facilities

- (a) Sanitary facilities for customers must be provided and must include not less than-
 - (i) one water closet; and
 - (ii) one washbasin
- (b) Sanitary facilities must be separated from the workroom by-
 - (i) an air lock with *self-closing* entry door; or
 - (ii) a *self-closing* door.

Tas H110.3 Washbasins

The area in which skin penetration is done must be provided with-

- (a) one wash basin for each 10, or part of 10 employees; and
- (b) an adequate supply of hot and cold water controlled by foot-operated or other suitable means which allows the use of a tap without hand contact.

After Tas Part H110 insert Tas Part H111 as follows:

TAS PART H111 DENTAL SURGERIES AND CHIROPRACTORS' PREMISES

Tas H111.1 Application of Part

This Part applies to premises to be used-

- (a) as a dental surgery and covered by the Dental Regulations 1983; or
- (b) in the practice of chiropractic and covered by the *Chiropractors Regulations 1984*.

Tas H111.2 Waiting room

Each dental surgery and chiropractor's premises must have a separate waiting room.

Tas H111.3 Floor, walls, and ceiling

The floor, walls and ceiling of a dentist's surgery and each room used in conjunction with that surgery or in a chiropractor's premises must be finished with materials which enable easy cleaning and disinfecting.

Tas H111.4 Disposal of liquid wastes

The operating section of a dental surgery must have adequate means for the disposal of waste water, other liquids and infected matter.

After Tas Part H111 insert Tas Part H112 as follows:

TAS PART H112 MORTUARIES**Tas H112.1 Application of Part**

This Part applies to any premises used for the storage or preparation for burial, cremation or disposal by other means, of bodies of deceased persons.

Tas H112.2 Layout of mortuary

- (a) A mortuary may be integral with the remainder of a building but must be separated physically from all public areas of that building.
- (b) Each mortuary at which bodies are prepared for burial, cremation or other disposal must be provided with a body preparation room-
 - (i) capable of being isolated from the remainder of the premises; and
 - (ii) having a *floor area* not less than 10 m².
- (c) A vehicle reception area or garage must be provided adjacent to and with direct access to the storage room or body preparation room to ensure that the transfer of uncoffined bodies is screened from public view.
- (d) Access to toilet and shower facilities from any other part of the mortuary premises must be only by way of an air lock.

Tas H112.3 Construction of body preparation room

- (a) The floor must be-
 - (i) of impervious material with a smooth, unbroken surface; and
 - (ii) uniformly graded to a floor drain.
- (b) All walls and partitions must be of concrete or masonry with a smooth, unbroken finish for ease of cleaning.

- (c) All joints between the floor, walls, partitions, ceiling, ventilation grilles, fittings, pipework, *windows* and light fittings must be sealed with impervious material for ease of cleaning.
- (d) All joints between the floor and walls or partitions must be covered for ease of cleaning.
- (e) The body preparation room must be provided with at least one washbasin, fitted with elbow or foot-operated taps, and an adequate supply of hot and cold water.
- (f) The body preparation room must be provided with refrigerated storage facilities-
 - (i) with sufficient capacity for the storage of at least two adult bodies; and
 - (ii) capable of maintaining an internal temperature between 1° and 5°C.

Tas H112.4 Water supply and sewerage

Each mortuary with a body preparation room must be connected to-

- (a) a permanent water supply with a physical discontinuity, provided by a registered break tank or reduced pressure zone device, between the water supply and all equipment, appliances, fittings and areas in the mortuary; and
- (b) a water carriage sewerage system.

After Tas Part H112 insert Tas Part H113 as follows:

TAS PART H113 FOUNDRIES

Tas H113.1 Application of Part

This Part is applicable to every building or premises in which foundry operations are undertaken as covered by the *Industrial Safety, Health and Welfare (Administrative and General) Regulations 1979*.

Tas H113.2 General

- (a) Every floor in a foundry must be level and, in places other than where molten metal is poured, must be composed of concrete or similar material or wooden blocks.
- (b) Every part of a foundry must be not less than 4.2 m high-
 - (i) where a ceiling is provided, measured from the floor to the ceiling; or

(ii) where a ceiling is not provided, measured from the floor to the lowest part of the roof.

(c) All roof lights in a foundry must be fitted with wired glass or protected by means of wire netting fitted under the underside.

Tas H113.3 Cupola charging platform

- (a) The floors of cupola charging platforms must be-
- (i) of heavy timber or non-slip steel plate;
 - (ii) securely fixed in position; and
 - (iii) level.
- (b) All parts of the cupola charging platform must be covered by a roof not less than 3 m above the platform.
- (c) A cupola charging platform must have-
- (i) a wall, not less than 1 m high, measured from the floor of the platform, constructed to surround the platform; and
 - (ii) the sides between the top of the wall and the roof suitably waterproofed and ventilated.
- (d) A properly constructed access stair or ramp must be provided to give access to every cupola charging platform and must comply with AS 1657.

Tas H113.4 Deep moulds and pits

Deep moulds or pits, for permanent use-

- (a) must be lined with bricks, concrete, or other suitable material in such a manner as to provide adequate reinforcement and to keep the pit or mould in a dry condition; and
- (b) must be securely fenced by means of a wall of adequate construction, railings or chains and stanchions raised, in each case, to a height not less than 1 m above the surface of the surrounding floor.

Tas H113.5 Pot furnaces

Where pot furnaces are below ground level the pit must be covered by a substantial grating at the point at which metal is removed from the furnace, and must at all other points be securely fenced as in Tas H113.4(b).

After Tas Part H113 insert Tas Part H114 as follows:

**TAS PART H114 PREMISES FOR
MANUFACTURE OR PROCESSING OF
GLASS REINFORCED PLASTICS**

Tas H114.1 Application of Part

This Part is applicable to every building in which glass reinforced plastics are manufactured or processed as covered by the *Industrial Safety, Health and Welfare (Administrative and General) Regulations 1979*.

Tas H114.2 Separation from other buildings

A building for manufacture or processing of glass fibre plastics must be-

- (a) separated from other buildings or parts of an occupancy by means of impervious walls with FRL at least 120/120/120; or
- (b) separated from all other buildings by a clear space of not less than 6 m.

Tas H114.3 Rise in storeys

The building must be of single *storey* construction.

Tas H114.4 Maximum floor areas

The *floor area* of any building or fire-separated section must not exceed the relevant maximum *floor area* set out in Tas Table H114.4.

Tas TABLE H114.4 MAXIMUM FLOOR AREA (m²) OF BUILDINGS FOR MANUFACTURE OR PROCESSING OF GLASS REINFORCED PLASTICS OR ISOCYANATES			
	Type of construction of building-		
	Type A	Type B	Type C
Not Sprinklered	1500	1200	1000
Sprinklered	6000	5000	3000

Tas H114.5 Required exits

- (a) Each fire-separated section of a building which is a work place must have at least two *exits* for escape purposes and the number and location of the *exits* must be such that any point on the floor is not be further than 20 m from one of the *exits*.
- (b) Only *exits* with vertically hinged swinging doors may be considered as *exits* for the purposes of this clause.

Tas H114.6 Hand laminating and spray depositing

The walls and floors of areas to be used for hand laminating and spray depositing must be constructed of *non-combustible* materials.

Tas H114.7 Ventilation

- (a) Mechanical or natural ventilation must be via low-level, exhaust ducting in a wall and a fixed, open, floor-level, fresh-air inlet ducting in the opposite wall such as to ensure a cross flow of the ventilation air over the complete working area.
- (b) Mechanical ventilation must provide not less than 6 air changes per hour.
- (c) The ventilation fan and exhaust ducting must be arranged in such a manner as to-
 - (i) produce a negative pressure within any exhaust ducting within the work place so that a leak in the ducting will not vent exhaust air back to the work place; and
 - (ii) vent the exhaust air to the atmosphere so as to prevent recirculation of that exhaust air.

Tas H114.8 Smoke and heat roof vents

Each fire-separated section must be provided with *automatic* smoke and heat roof vents.

After Tas Part H114 insert Tas Part H115 as follows:

TAS PART H115 PREMISES FOR PRODUCTION OR PROCESSING OF ISOCYANATES

Tas H115.1 Application of Part

This Part is applicable to every building in which an isocyanate industry is undertaken as covered by the *Industrial Safety, Health and Welfare (Administrative and General) Regulations 1979*.

Tas H115.2 Areas of work places

Work places in which an isocyanate industry is carried on must be divided into the following divisional areas:

- (a) Administration and staff amenities.
- (b) Workshop.
- (c) Bulk stores.

- (d) Curing room.
- (e) Processing plant.
- (f) Raw materials plant.
- (g) Manufacture.

Tas H115.3 Separation from other areas and buildings

- (a) Each of the divisional areas *required* by Tas H115.2 other than the administration and staff amenities building, must be-
 - (i) separated from each of the other divisional areas by means of an impervious wall with FRL not less than 120/120/120; or
 - (ii) separated from all other buildings by a clear space of not less than 6 m.
- (b) Notwithstanding the distance requirements of (a) bulk stores of polyols and bulk stores of isocyanates must comply with the requirements of the *Dangerous Goods Regulations 1976*.

Tas H115.4 Rise in storeys

The building must be of single *storey* construction.

Tas H115.5 Maximum floor areas

The *floor area* of any building or fire-separated section must not exceed the area shown in Tas Table H114.4.

Tas H115.6 Required exits

- (a) Every building or divisional area of a work place must have not less than 2 *exits* for escape purposes.
- (b) The number and location of the *exits* must be such that any point on the floor is not more than 20 m from one of the *exits*.
- (c) Only *exits* with vertically hinged swinging doors may be considered as *exits* for the purposes of this clause.

Tas H115.7 Bulk stores for polyols and isocyanates

- (a) A bulk store for polyols must be constructed from *non-combustible* materials and have a smooth impervious concrete floor and it must protect the polyols from direct exposure to the sun's radiation.

- (b) A bulk store for isocyanates must-
- (i) be constructed from *non-combustible* materials, have a smooth impervious concrete floor, and must protect the isocyanate containers from direct exposure to the sun; and
 - (ii) if it is used for storage of either TDI or HDI and is not an open sided building, be fitted with mechanical ventilation so that the TLV is not exceeded at any time provided that the ventilation must provide not less than 6 air changes and hour.
- (c) The area around both a polyol bulk store and an isocyanate bulk store must be banded, the band or bands must ensure separation of the polyol and isocyanate areas and each band must have a capacity of 10% more than the storage capacity of the largest tank it protects.

Tas H115.8 Curing room

The curing room for the storage of newly produced flexible polyurethane foam must be constructed of *non-combustible* materials with a smooth impervious concrete floor and fitted *automatic* fire vents in the roof.

After Tas Part H115 insert Tas Part H116 as follows:

TAS PART H116 PREMISES FOR ELECTRO-PLATING ELECTRO-POLISHING, ANODISING OR ETCHING

Tas H116.1 Application of Part

This Part is applicable to every building where any of the processes of electro-plating, electro-polishing, anodising or etching are undertaken, as covered by the *Industrial Safety, Health and Welfare (Administrative and General) Regulations 1979*.

Tas H116.2 Floors

The floor of every plating area must be-

- (a) so graded as to-
 - (i) permit easy flushing with water; and
 - (ii) prevent liquids from flowing from the area into other parts of the work place; and
- (b) chemically resistant to the solutions used in the process.

Tas H116.3 Height of plating area

Every part of a plating area must be not less than 2.7 m in height-

- (a) measured from the floor to the ceiling if a ceiling is provided; or
- (b) measured from the floor to the lowest part of the roof if a ceiling is not provided.

Tas H116.4 Air space

In every plating area there must be not less than 14 m³ of air space for each person employed and, in the calculation of such space, the height taken into account must not exceed 4.2 m.

Tas H116.5 Ceiling construction

The ceiling of a plating area must be so constructed as to prevent, so far as is practicable, atmospheric contaminants from escaping into rooms or work places, situated above the level of the ceiling.

After Tas Part H116 insert Tas Part H117 as follows:

TAS PART H117 PREMISES FOR LEAD PROCESSING

Tas H117.1 Application of Part

This Part is applicable to every building in which lead processes are used, as covered by the *Industrial Safety, Health and Welfare (Administrative and General) Regulations 1979*.

Tas H117.2 Floors

- (a) The floor of every work place where a lead process is used must be-
 - (i) so constructed of concrete or other suitable material as to be smooth and impervious to fluids; and
 - (ii) graded and properly drained to permit flushing with water.
- (b) The material of which the floor is constructed must be applied to the walls to a height of not less than 75 mm in such a fashion that the angle between the walls and the floor is coved for easy cleaning.

Tas H117.3 Height of lead processing areas

Every part of a lead processing area must be not less than 2.7m in height-

- (a) where a ceiling is provided, measured from the floor to the ceiling; or
- (b) where a ceiling is not provided, measured from the floor to the lowest part of the roof.

Tas H117.4 Air space and floor space

- (a) In every lead processing area there must be not less than 14 m³ of air space for each person employed therein, and in the calculation of such space the maximum height taken must be not greater than 4.2 m; and
- (b) total floor space for the persons employed in such area, exclusive of space used for storage, must be not less than 3.3 m² for each person so employed.

Tas H117.5 Interior of lead processing areas

- (a) The inner surfaces of the walls of every lead processing area must be of a smooth material impervious to fluids and must not contain any projections on which dust may lodge; and
- (b) the interior construction of the ceiling or roof must, so far as is practicable, be such that dust will not settle on it.

Tas H117.6 Dust collection

Any areas in which dust-forming lead materials are manipulated, moved or treated must be served by a mechanical exhaust ventilation system capable of safely and effectively collecting all dust.

Tas H117.7 Isolation of certain processes

Where any process of pasting of electric accumulator plates or drying of paste plates, or melting down of pasted plates or of formation with tacking in the electric accumulator industry or of manipulation of dry oxide of lead, is to be carried on in the same room as any other lead process, the processes of pasting, drying, melting, formation or manipulation must be isolated from one another and from any other lead process-

- (a) by a partition extending from the floor to the ceiling in the case of a room having a ceiling not more than 3.6 m in height, or to a height of 2.7 m in any other case; or
- (b) by some other suitable method.

Tas H117.8 Drying room shelves

The racks or shelves provided in any drying room must not be more than 2.6 m from the floor nor more than 650 mm in width except that, in the case of racks or shelves set or drawn from both sides, the total width must not exceed 1.3 m.

Tas H117.9 Washing facilities

Washing facilities served with running hot and cold water for the use of all employees engaged in a lead process must be provided consisting of-

- (a) one washbasin for each 5 employees, or part thereof; and
- (b) one shower bath for each 8 employees, or part thereof.

Tas H117.10 Change rooms

In every work place in which lead is processed there must be provided two suitable furnished change rooms for the use of employees as follows-

- (a) one of the change rooms must be used for taking off, storing, and putting on of the street clothing of employees;
- (b) the other of the change rooms must be used for the taking off, storing, and putting on of overalls and other clothing worn in any work room;
- (c) each change room must be so constructed and situated as to prevent the entry into the room of dust or fumes generated in a workroom; and
- (d) each change room must be in close proximity to the washing facilities *required* in Tas H117.9.

After Tas Part H117 insert Tas Part H118 as follows:

TAS PART H118 BOOTHS FOR SPRAY PAINTING OR SPRAY COATING

Tas H118.1 Application of Part

This Part is applicable to every building in which spray painting or spray coating is undertaken, as covered by the *Industrial Safety, Health and Welfare (Administrative and General) Regulations 1979*.

Tas H118.2 Structure of booths

- (a) Booths must be constructed entirely of, or entirely lined with, metal or other suitable, durable, *non-combustible* material.

- (b) Floors of booths must be of even, unbroken concrete, or where this is impracticable, the floor under the booth and to a distance of at least 1 m beyond the entrance of the booth must be covered over with metal or other *non-combustible* material.
- (c) *Windows* in booths must be in fixed metal sashes and must be of wired or reinforced glass or other suitable materials.
- (d) The interior surfaces of booths must be smooth finished.

Tas H118.3 Emergency exits

- (a) Booths located in basements or in confined spaces and every room booth must be provided with an emergency *exit* situated as far as practicable from the normal means of entry to the booth.
- (b) No work area of a room booth must be at a distance greater than 6 m from an *exit*.
- (c) The emergency *exit* must consist of a door or panel so constructed as to be easily opened in an outward direction to permit rapid egress from the booth to a place of safety.
- (d) Each emergency *exit* must be marked with an *exit* sign.

Tas H118.4 Doors

- (a) Where swinging doors are fitted to any booth they must be made to open outwards and where sliding doors are fitted, a supplementary outward opening door for personnel must be provided, located as far as practicable from the sliding doors;
- (b) Roller shutter doors must not be fitted except when used as a secondary *exit* for vehicles or other large objects.

Tas H118.5 Exhaust systems

- (a) Each spray booth must be connected to an exhaust system.
- (b) Every spray booth having an internal volume more than 42 m³ and in which material having a flammable content is sprayed, must be provided with an individual exhaust duct.
- (c) Ducts must be extended to such a height above the eaves of the work place and the point of discharge must be so located as to prevent the discharged air from re-entering the work place.
- (d) Exhaust ducts must not be erected within 230 mm of *combustible* material unless effectively insulated.

- (e) The termination of all exhaust ducts delivering to the outside atmosphere must be protected from the detrimental effects of weather and fire hazards from any source and must be arranged so as not to constitute a nuisance in the neighbourhood.
- (f) The ventilation of a work room, in which a spray booth is erected, must allow free entrance of air into the booth.
- (g) Contaminated air from a spray booth must not infiltrate a workroom.

Tas H118.6 Ducts or flues of spray-bake booths

Ducts or flues from a gas or oil burner used in the heat exchanger of a spray-bake booth-

- (a) must discharge at a vertical distance not less than 2.3 m above the intake; and
- (b) must be insulated.

After Tas Part H118 insert Tas Part H119 as follows:

TAS PART H119 ELECTRICITY DISTRIBUTION SUBSTATIONS

Tas H119.1 Application of Part

This Part is applicable to every surface building type electricity distribution substation as defined in the Hydro Electric Commission's "Substation Design and Construction Manual".

Tas H119.2 Building-type substations

A building Type electricity distribution substation which complies with the building construction requirements of the Hydro-Electric Commission's "Substation Design and Construction Manual" satisfies this Part.

After Tas Part H119 insert Tas Part H120 as follows:

TAS PART H120 PREMISES FOR STORAGE OF DANGEROUS GOODS

Tas H120.1 Application of Part

This Part applies to every building used for the storage of dangerous goods covered by the *Dangerous Goods Act 1976* except for explosives.

Tas H120.2 Interpretation

The words "dangerous goods", "explosive" and "flammable liquid" have the same meaning as in the *Dangerous Goods Act 1976*.

Tas H120.3 Class of dangerous goods

The classification of dangerous goods will be as prescribed in the *Dangerous Goods Regulations 1992*.

Tas H120.4 Premises for storage of dangerous goods

- (a) A building must comply with the relevant Australian Standard, applicable to the storage of dangerous goods listed below-
- | | |
|--------------------------------------|-----------|
| (i) Class 3 flammable liquids: | AS 1940 |
| (ii) Pesticides : | AS 2507 |
| (iii) Liquefied petroleum gas: | AS 1596 |
| (iv) Anhydrous ammonia: | AS 2022 |
| (v) Chlorine: | AS 2927 |
| (vi) Organic peroxides: | AS 2714 |
| (vii) Class 8 substances-Corrosives: | AS 3780.8 |
- (b) Except as provided in (a) a room, or space, for the storage of dangerous goods must be on the ground floor and may be-
- (i) attached to an *external wall* of a building; or
 - (ii) located within a building; or
 - (iii) separate from any building.
- (c) A room, or space, attached to or located within a building must be separated from the remainder of the building by one or more walls, each having an FRL not less than 240/240/240.
- (d) Every *external wall* of a room used for the handling or storage of dangerous goods, if not *required* to have an FRL, must be *non-combustible*.
- (e) If a storage area attached to an *external wall* of a building is a space without walls, other than the separating wall, the fire protected separating wall must extend for a distance of 5 m on each side of the common part of the wall or to the end of the wall, whichever is less.
- (f) Unless the wall *required* in (c) extends, over its full length, to the underside of the roof covering, the ceiling of a room, or space, for the storage of dangerous goods must have FRL not less than 180/180/180.
- (g) The floor surface of a room, or space, for the storage of dangerous goods must be-
- (i) of hardwood or a *non-combustible* material; and

- (ii) resistant to attack by, and compatible with the dangerous goods stored in the room or space; and
- (iii) of impervious construction.

(h) The provisions of the Australian Standards shall apply in cases of conflict between these provisions and those in the following section of this Appendix.

Tas H120.5 Workrooms

A workroom for industrial or commercial use of dangerous goods must-

- (a) be located in accordance with AS 2430, Parts 1, 2 and 3, from any *fire source feature*; and
- (b) have all doors opening outwards; and
- (c) have passages of escape clear of machinery or other plant.

Tas H120.6 Exits

- (a) *Exits* must be provided in accordance with Part D1.
- (b) Any door in a wall, separating a room or space for storage and handling of dangerous goods from another room, must have FRL in accordance with Specification C1.1 but not less than 120/120/120.

Tas H120.7 Explosion vents

- (a) A room, or space, in which dangerous goods are stored must be provided with natural or mechanical ventilation so that any vapour generated within the storage is diluted with and removed by air passing through the storage area. Air dilution of the vapour should be sufficient to maintain the storage below the lower explosive limits and recommended workplace exposure standards.
- (b) The requirements of (a) are satisfied if ventilation provided to the room or space in which the dangerous goods are stored is in accordance with the ventilation requirements of AS 1940.

Tas H120.8 Spill Collection Bunds

- (a) A spill collection bund must be provided for all liquid dangerous goods stored in a room or space.
- (b) For Class 3 dangerous goods the bund must comply with the requirements of AS 1940.
- (c) For liquid dangerous goods other than Class 3, the spill collection bund-

- (i) must be capable of containing 100% of the largest package or tank plus 25% of the storage capacity up to 10 000 L together with 10% of the storage capacity beyond 10 000 L; and
 - (ii) may form part of the room or space or may be separate; and
 - (iii) must be constructed of materials that are impervious to the dangerous goods it is to contain.
- (d) Separate bunds must be provided for dangerous goods that are incompatible.

Tas H120.9 Electrical equipment

Any electrical equipment in a room or space used for the storage of dangerous goods is to comply with the provisions outlined in AS 2430 Part 1, 2 and 3 and AS 2381.

After Tas Part H120 insert Tas Part H121, as follows:

TAS PART H121 HAIRDRESSERS' PREMISES

Tas H121.1 Application of Part

This Part applies to any premises registered under the *Hairdressers' Registration Act 1975*.

Tas H121.2 Size of operating section

The operating section of a hairdressers' premises must have-

- (a) any floor plan dimension not less than 2.5 m; and
- (b) a *floor area* sufficient to enable the operations to proceed without inconvenience to the operators or the customers.

Tas H121.3 Premises in a residence

A hairdressers' premises located in a residence must-

- (a) be isolated from the living quarters; and
- (b) have direct access from a public place.

Tas H121.4 Sanitary facilities

Except where sanitary facilities are available for common use, every hairdressers' premises which has more than 5 operating seats must be provided with one water closet and one washbasin for use by customers.

Tas H121.5 Lighting

Lighting of every hairdressers' premises must comply with AS 1680.

APPENDIX

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VICTORIA

INTRODUCTION

This Appendix contains variations and additions to the Building Code of Australia (BCA) provisions which are considered necessary for the effective application of the Code in Victoria and shall be treated as amendments to the Code.

VICTORIA - BCA APPENDIX

CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application in Victoria as follows:

A - GENERAL PROVISIONS

- Vic A1.1 Definitions
- Vic Specification A1.3
Standards Adopted by Reference

B - STRUCTURE

- Vic B1.3 Materials and forms of construction

D - ACCESS AND EGRESS

- Vic D2.21 Operation of latch

E - SERVICES AND EQUIPMENT

- Vic Table E1.5 Requirements for sprinklers

F - HEALTH AND AMENITY

- Vic Table F2.1 Provision of sanitary and other facilities in residential buildings
- Vic F2.5 Construction of sanitary compartments
- Vic F2.101 First aid rooms
- Vic F3.101 Children's services centres - Size of rooms
- Vic F3.102 Class 3 buildings - Size of rooms
- Vic F3.103 Class 3 and Class 9a residential aged care buildings - Size of rooms
- Vic F4.1 Provision of natural light
- Vic F5.1 Application of Part
- Vic Part F6 Thermal Insulation

G - ANCILLARY PROVISIONS

- Vic G1.101 Children's services centres - outdoor play space

Continued

Contents continued

H - SPECIAL USE BUILDINGS

Vic Part H101 Class 3 and Class 9a Residential Aged Care Buildings

Vic Part H102 Places of Public Entertainment

Vic Part H103 Fire Safety in Class 2 and Class 3 Buildings

FOOTNOTE

Special requirements for Certain Buildings and Components

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Section A GENERAL PROVISIONS

Part A1 INTERPRETATION

Vary A1.1 as follows:

Vic A1.1 Definitions

Add the definition of "children's services centre" as follows:

Children's services centre means a *children's services centre* registered or proposed to be registered under the Health Act 1958, being-

- (a) Class I where-
 - (i) children under the age of 6 years may be cared for, educated or minded for a period of no longer than 12 hours per day; or
 - (ii) a pre-school kindergarten or pre-school play centre is carried on by a proprietor who receives a pre-school subsidy from the Department of Health and Community Services; or
- (b) Class II where no child may be cared for, educated or minded for more than 3 hours per day and no more than 10 hours per week but does not include a *children's services centre* Class I.

Substitute the definition of "early childhood centre" as follows:

Early childhood centre means a *children's services centre* Class I.

Substitute the definition of "residential aged care building" as follows:

Residential aged care building means a building, including a supported residential service building, hostel or nursing home, whose residents due to their incapacity associated with the ageing process need physical assistance in conducting their daily activities and to evacuate the building during an emergency.

Vary Specification A1.3 Table 1 as follows:

**VIC Specification A1.3
STANDARDS ADOPTED BY REFERENCE**

TABLE 1 SCHEDULE OF REFERENCED DOCUMENTS			
No	Date	Title	BCA clause(s)
Add clause references to the following Standards in Table A1.3:			
AS 1926		Swimming pool safety	
Part 1	1993	Fencing for swimming pools	G1.1, Vic G1.101
AS 2118		Automatic fire sprinkler systems	
Part 4	1995	Residential	Spec E1.5, Vic H103.1
AS/NZS 4200		Pliable building membranes and underlays	
Part 2	1994	Installation requirements	F1.6, Vic F6.5
Add in Table A1.3 additional documents as follows:			
CAMS - Track operators safety guide - Edition 2			
		Confederation of Australian motor sport June 1993	Vic H102.3
House energy rating			
		Energy Victoria June 1994	Vic F6
Residential care design guidelines			
		Health and Community Services Victoria 1995	Vic H101
Residential fire safety systems Practice Note No. 07			
		Building Control Commission 1994	Vic H103.1
Emergency communication systems Practice Note No. 08			
		Building Control Commission 1994	Vic H103.1

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Section B STRUCTURE

Part B1 STRUCTURAL PROVISIONS

Add Vic B1.3 (n) as follows:

Vic B1.3 Materials and forms of construction

- (n) Lift shafts which are not *required* to have an FRL-
- (i) with the exception of landing doors, emergency doors and pit access doors, and lifts installed in atrium and observation areas, lift well enclosures between the bottom of the pit and the ceiling of the lift well if they are completely enclosed with imperforate material complying with (iii) and have a resistance to piercing which is not less than that of 1.2 mm thick mild steel; and
 - (ii) lifts installed in atrium areas if they are protected as follows:
 - (A) with imperforate material complying with (iii) not less than 2.5 m in height above any landings which are within 800 mm horizontal reach of any vertical moving lift component including ropes and counterweights; and
 - (B) at the lowest level of the atrium area that the lift serves, on all sides except the door opening, for not less than 2.5 m in height, by enclosure with an imperforate material complying with (ii); and
 - (C) where the protection is provided by glass, the glass complies with (iii) and is chemically or thermally toughened and laminated with an overall glass thickness of not less than 10 mm, with a polyvinyl butyl interlayer of not less than 0.76 mm; or annealed and laminated with an overall glass thickness of not less than 10 mm with a polyvinyl butyl interlayer of not less than 1.5 mm; and
 - (iii) the protecting or enclosing material referred to in (i) and (ii) is supported and braced so that it is capable of sustaining a force of 450 N applied horizontally on any 50 mm x 50 mm area without deflecting more than 25 mm.

Section D ACCESS AND EGRESS

Part D2 CONSTRUCTION OF EXITS

Add Vic D2.21 (f) as follows:

Vic D2.21 Operation of latch

- (f) is the *exit* door from a *children's services centre* Class I in which case the latch may be located between 1.5 m and 1.65 m from the floor.

Section E SERVICES AND EQUIPMENT

Part E1 FIRE FIGHTING EQUIPMENT

Substitute Note (3) of Table E1.1 with Vic Table E1.5 as follows:

Vic Table E1.5 REQUIREMENTS FOR SPRINKLERS

- (3) For the purposes of this Table, occupancies of excessive fire hazard comprise buildings which contain-
- (a) hazardous process risks including the following:
- (i) aircraft hangars.
 - (ii) electrical/electronic manufacturing and assembly (predominantly plastic components).
 - (iii) fire-lighter manufacturing.
 - (iv) fireworks manufacturing.
 - (v) flammable liquid spraying.
 - (vi) foam plastic goods manufacturing and/or processing.
 - (vii) foam rubber goods manufacturing and/or processing.
 - (viii) hydrocarbon based sheet product manufacturing and/or processing.
 - (ix) nitrocellulose and nitrocellulose goods manufacturing.
 - (x) paint and varnish works, solvent based.
 - (xi) plastic goods manufacturing and/or processing works.
 - (xii) resin and turpentine manufacturing.
 - (xiii) vehicle repair shops.

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Vic Table E1.5 continued

- (b) *combustible* goods with an aggregate volume exceeding 2000 m³ and stored to a height greater than 4 m such as the following:
- (i) aerosol packs with flammable contents.
 - (ii) cartons and associated packing material excluding cartons with densely packed non-combustible content.
 - (iii) electrical appliances where the components are predominantly plastic.
 - (iv) foamed rubber or plastics including wrappings or preformed containers.
 - (v) paper products.
 - (vi) plastic, rubber, vinyl and other sheets in the form of offcuts, random pieces or rolls.
 - (vii) textiles raw and finished.
 - (viii) timber products.

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Section F HEALTH AND AMENITY**Part F2 SANITARY AND OTHER FACILITIES**

Renumber F2.5 to F2.5(a), (i), (ii) and (iii) and add Vic F2.5(b) as follows:

Vic F2.5 Construction of sanitary compartments

- (b) Closet fixtures situated in a group for use by children in a *children's services centre* Class I must be separated from one another by means of partitions extending from between 150 mm to 250 mm above the floor to a height of not less than 900 mm or more than 1.5 m.

Vary Table F2.1 as follows:

Vic Table F2.1 PROVISION OF SANITARY AND OTHER FACILITIES IN RESIDENTIAL BUILDINGS	
Class of building	Minimum facilities required
Class 3 (other than Class 3 residential aged care buildings)	Facilities for residents- For each building or group of buildings- (a) a bath or shower; and (b) a closet pan and washbasin, for each 10 residents for whom private facilities are not provided, except that- (c) if one urinal is provided for each 25 males up to 50 and one additional urinal for each additional 50 males or parts thereof, one closet pan for each 12 males may be provided. Facilities for employees - see Clause F2.3. Note: These facilities need not be situated within the building.
Class 3 residential aged care buildings	Facilities for residents- For each building or group of buildings being a Class 3 residential aged care building- (a) a shower, a closet pan and wash basin for each 8 residents or part thereof; and (b) a peninsular bath installation for each 30 residents or part thereof. Note: Urinals are not taken into consideration and should not be provided.

Add Vic F2.101 as follows:

Vic F2.101 First aid rooms

- (a) If an *assembly building*, place of public entertainment (as defined in the Building Act 1993) or an *open spectator stand* accommodates more than 5000 spectators at an arena, sportsground, showground, racecourse, cricket ground, football ground, coursing ground, motor racing arena, or the like, a suitable room or rooms must be provided in accordance with Table F2.101 for use by para-medical attendants for first aid purposes.

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Table F2.101 FIRST AID ROOMS	
Spectator Capacity	Number of Rooms
5001 - 10 000	1
10 001 - 15 000	2
15 001 - 30 000	3
30 001 - 45 000	4
45 001 - 60 000	5
60 001 - 75 000	6
75 001 - 90 000	7
90 001 - 105 000	8

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- (b) **Conditions:** First aid rooms *required* by (a) must-
- (i) be distributed as uniformly as possible throughout the *assembly building or open spectator stand*, and
 - (ii) be convenient to a public road; and
 - (iii) be readily accessible from within and outside the arena or ground; and
 - (iv) have a *floor area* of not less than 24 m²; and
 - (v) be provided with a suitable wash basin or sink.

Part F3 ROOM SIZES

Add Vic F3.101 as follows:

Vic F3.101 Children’s services centres - size of rooms

- (a) A children’s room in a *children’s services centre* Class I must have a *floor area* allowing a clear space of at least 3.3 m² for each child using that room.
- (b) When calculating the clear space required by (a) any passageway or thoroughfare less than 3 metres wide, kitchen, toilet or shower area, storage area or any other ancillary area must not be included.

Add Vic F3.102 as follows:

Vic F3.102 Class 3 buildings - size of rooms

A habitable room in a Class 3 building (other than a *residential aged care building*)-

- (a) must have a *floor area* of at least 7.5 m²; or
- (b) may have a *floor area* less than 7.5 m² provided the room has light and ventilation not less than that *required* for a room having a *floor area* of 7.5 m².

Add Vic F3.103 as follows:

Vic F3.103 Class 3 and Class 9a residential aged care buildings - size of rooms

In a Class 3 and a Class 9a *residential aged care building*-

- (a) each bedroom must have a *floor area* of not less than 12 m² per occupant; and
- (b) all other common *habitable rooms* (other than kitchens) must have a *floor area* of not less than 7.5 m² with-
 - (i) in a Class 3 hostel or supported residential services building an aggregate *floor area* of not less than 3.5 m² per occupant; or
 - (ii) in a Class 9a nursing home an aggregate *floor area* of not less than 2.5 m² per occupant.

Part F4 LIGHT AND VENTILATION

Substitute F4.1 (d) as follows:

Vic F4.1 Provision of natural light

- (d) **Class 9b buildings** - to all general purpose classrooms in primary or secondary *schools* and all playrooms or the like for the use of children in *children's services centres*.

Part F5 SOUND TRANSMISSION AND INSULATION

Substitute objective application as follows:

Application:

Objective F05 only applies to Class 2 and Class 3 buildings except *residential aged care buildings*.

Substitute F5.1 as follows:

Vic F5.1 Application of Part

The deemed-to-satisfy provisions of this Part apply to Class 2 and Class 3 buildings except *residential aged care buildings*.

Add Vic Part F6 as follows:

Vic Part F6 THERMAL INSULATION

OBJECTIVE

Vic FO6 The objective of this Part is to prevent undue loss of energy from a residential building.

Application:

Objective FO6 only applies to Class 2 and Class 3 buildings and to a Class 4 part of a building.

FUNCTIONAL STATEMENT

Vic FF6.1 A residential building is to be designed to achieve conservation of energy used for internal heating or cooling.

PERFORMANCE REQUIREMENT

Vic FP6.1 A residential building must have a reasonable level of thermal insulation to conserve energy used for internal heating and cooling.

DEEMED-TO-SATISFY PROVISIONS

Vic F6.0 Deemed-to-Satisfy Provisions

Performance Requirement Vic FP6.1 is satisfied by complying with Vic F6.1 to Vic F6.5.

Vic F6.1 Application

- (a) The deemed-to-satisfy provisions of this Part apply to Class 2 and Class 3 buildings and to a Class 4 part of a building.
- (b) Vic F6.3(a)(i) does not apply to-
 - (i) concrete panels, cavity brick, earth wall construction, ashlar stone or other masonry walls which have a thickness (excluding any cavity) of not less than 180 mm if the floor of the building is concrete or masonry in direct contact with the ground; or
 - (ii) windows, vents and other similar openings in walls, roofs and ceilings.

Vic F6.2 Definition of R value

R or *R value* means the thermal resistance of an element of the building measured in $\text{m}^2 \cdot \text{K}/\text{W}$.

Vic F6.3 Provision of thermal insulation

- (a) The building must-
 - (i) for the elements nominated in Vic Table F6.1, comply with all the *R Values* of option A or all the *R Values* of option B; or

- (ii) achieve a House Energy Rating of at least 3 stars and at least equivalent to that which would be achieved using option A or B of Vic Table F6.1, as assessed by-
 - (A) a registered building practitioner accredited in the use of Energy Victoria's House Energy Rating; or
 - (B) Energy Victoria.

Vic Table F6.1 MINIMUM OVERALL R VALUES		
Element	Option A	Option B
Roof or ceiling	<i>R2.2</i>	<i>R2.2</i>
External wall	<i>R1.3</i>	<i>R1.7</i>
Ground Floor	<i>R1.0</i>	<i>R0.7</i>
Note: For the purposes of this Table a wall which separates a Class 2 or 3 building or a Class 4 part of a building from a Class 10a building is regarded as an <i>external wall</i> .		

- (b) **Deemed R Value** - An element described in Vic Table F6.2 is deemed to have the *R value* nominated in the Table adjacent to the description of the element.

Vic Table F6.2 R VALUES FOR COMMON ELEMENTS	
Description of element	R value
Roofs or ceilings	
Tiled or metal pitched roof, <i>R2.5</i> bulk insulation between ceiling joists, lined ceiling	<i>R2.4</i>
Tiled or metal pitched roof, rfl as sarking and insulation over rafters, <i>R2.0</i> bulk insulation between ceiling joists, lined ceiling	<i>R2.2</i>
Metal deck roof, rfl as sarking and insulation, 20 mm air gap, <i>R2.0</i> bulk insulation installed between joists/beams, rfl as a vapour barrier, ceiling lining on underside of joists/beams	<i>R2.2</i>
Metal deck roof, <i>R2.0</i> bulk insulation installed between rafters, rfl as a vapour barrier, ceiling lining on underside of rafters	<i>R2.2</i>
Metal deck roof, <i>R2.0</i> bulk insulation installed between roof battens, rfl as a vapour barrier, ceiling lining on top of exposed rafters	<i>R2.2</i>
Tiled roof, rfl as sarking and insulation, <i>R2.0</i> bulk insulation installed between counter battens, optional rfl as a vapour barrier, ceiling lining on top of exposed rafters	<i>R2.2</i>
Continued	

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Vic Table F6.2 continued	
Description of element	R value
External walls	
Brick/masonry veneer with R1.5 bulk insulation between the studs, lined internally	R1.7
Brick/masonry veneer with R1.0 foam board fixed over the face of the studs, lined internally	R1.7
Brick/masonry veneer with double sided rfl fixed to external face of studs, lined internally	R1.3
Weatherboard/fibre cement cladding, R1.5 bulk insulation between studs, lined internally	R1.7
Weatherboard/fibre-cement, double sided perforated rfl dished between studs lined internally	R1.3
Cavity brick with R0.8 foam board in cavity	R1.3
150 mm concrete panel with R1.0 foam board and lined internally	R1.3
Floors	
Concrete/masonry on ground	R1.5
Timber framed floor, enclosed perimeter	R1.0
Timber framed floor, unenclosed perimeter, 20 mm foam board fixed to the underside of floor joists	R1.0
Timber framed floor unenclosed perimeter	R0.7
Note: For the purposes of this Table an enclosed perimeter may incorporate sub-floor ventilation at the rate of approximately 7300 mm ² /m.	

Vic F6.4 Chimneys and flues

Chimneys and flues from open solid fuel-burning appliances must be provided with a damper or flap.

Vic F6.5 Installation of reflective foil laminate

Installation of reflective foil laminate (rfl) must comply with AS/NZS 4200.2.

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Section G ANCILLARY PROVISIONS

Part G1 MINOR STRUCTURES AND COMPONENTS

Add Vic G1.101 as follows:

Vic G1.101 Children's services centres - outdoor play space

Any outdoor play space in a *children's services centre* must be enclosed on all sides with fences or barriers at least 1.5 m high measured from ground level, with any gates and fittings complying with AS 1926.1.

Section H SPECIAL USE BUILDINGS

Add Vic Part H101 as follows:

Vic Part H101 CLASS 3 AND CLASS 9a RESIDENTIAL AGED CARE BUILDINGS

Application:

This Part only applies to Class 3 and Class 9a *residential aged care buildings*.

Note: Vic Part H101 - Class 3 and Class 9a Residential Aged Care Buildings contains additional deemed-to-satisfy provisions for Sections D and F for Class 3 and Class 9a *residential aged care buildings* as well as additional performance requirements and associated deemed-to-satisfy provisions.

PERFORMANCE REQUIREMENTS

Vic HP101.1 The temperature of water supplied to baths and showers for use by residents must be controlled to avoid the risk of scalding whilst ensuring the stored water temperature does not encourage the growth of Legionella Bacteria.

Vic HP101.2 An electronic communication system must be provided to enable residents and staff to summon assistance in *habitable rooms* (other than kitchens), water closets, shower rooms and bathrooms.

Vic HP101.3 Sufficient general purpose outlets must be provided for electrical appliances in bedrooms in locations that obviate the need for extension leads.

DEEMED-TO-SATISFY PROVISIONS

Vic H101.0 Deemed-to-Satisfy Provisions

Performance Requirements Vic HP101.1 to HP101.3 and relevant Performance Requirements in Sections D and F are satisfied by complying with Vic H101.1 to Vic H101.7.

Vic H101.1 Application of Part

The deemed-to-satisfy provisions of this Part apply to Class 3 and Class 9a *residential aged care buildings*.

Vic H101.2 Doorway width

- (a) The clear width of all bedroom entrance doorways must be not less than 900 mm.
- (b) The clear width of all other doorways must be not less than 800 mm.

Vic H101.3 Windows

- (a) The sill height of windows in *habitable rooms* (except kitchens) must be not more than 900 mm above the floor.
- (b) Openable windows must be provided with flyscreens.

Vic H101.4 Grab rails and handrails

- (a) Grab rails must be provided in association with every closet fixture, shower or bath in accordance with the Residential Care Design Guidelines.
- (b) Handrails must be provided along both sides of every common passageway or common corridor used by residents and they must be-

- (i) fixed not less than 50 mm clear of the wall; and
- (ii) where practicable, continuous for their full length.

Vic H101.5 Water temperature

The hot water temperature must comply with the minimum design parameters of the Residential Care Design Guidelines.

Vic H101.6 Electronic communications system

A communication system must-

- (a) contain a back-up power supply; and
- (b) have a control that enables the call to be cancelled manually at the point of origin only; and
- (c) incorporate a device at the point of origin that indicates the system has operated; and
- (d) incorporate an indication panel in the manager's office or staff area that clearly identifies the point of origin of a call; and
- (e) have an audible tone that has a continuous signal until deactivated at the point of origin; and
- (f) be operational at all times; and
- (g) have two call points in each en-suite or combined shower/water closet with one call point located in the shower recess and the other on the wall beside the closet pan ahead of the bowl rim; and
- (h) have call points (other than those mentioned in (g)) which are located-
 - (i) within the reach of a resident whilst in bed; and
 - (ii) in all common *habitable rooms*; and
 - (iii) in all bathrooms, *sanitary compartments* and shower rooms where the call point must be of waterproof construction and within reach of any fallen resident.

Vic H101.7 Electrical power outlets

General purpose outlets must be provided as follows:

- (a) In bedrooms with one occupant - two general purpose outlets provided on a minimum of two walls.
- (b) For each additional occupant - two general purpose outlets provided at the head of each additional bed.

Add Vic Part H102 as follows:

Vic Part H102 PLACES OF PUBLIC ENTERTAINMENT

Application:

This Part applies to all places of public entertainment as defined in the Building Act 1993 and prescribed in regulation 10.2 of the Building Regulations 1994.

Note: Vic Part H102 - Places of Public Entertainment contains additional deemed-to-satisfy and performance requirements for Sections B, D and F for places of public entertainment.

PERFORMANCE REQUIREMENTS

- Vic HP102.1** Temporary tiered seating stands and embankments must be designed using engineering principles and constructed to provide for the safety of the patrons and orderly means of evacuation in an emergency.
- Vic HP102.2** Every place of public entertainment where motor vehicle racing takes place must be provided with suitable barriers and guard rails to protect the public from injury.
- Vic HP102.3** Sufficient sanitary and amenity facilities must be provided at places of public entertainment for use by patrons.

DEEMED-TO-SATISFY PROVISIONS

Vic H102.0 Deemed-to-Satisfy Provisions

Performance Requirements Vic HP102.1 to HP102.3 are satisfied by complying with Vic H102.1 to Vic H102.4.

Vic H102.1 Application of Part

The deemed-to-satisfy provisions of this Part apply to all places of public entertainment as defined in the Building Act 1993 and prescribed in regulation 10.2 of the Building Regulations 1994.

Vic H102.2 Temporary tiered seating, concourses and embankments

Temporary tiered seating stands and embankments must be designed and constructed as follows:

- (a) Temporary tiered seating, concourses and embankments must comply with the deemed-to-satisfy provisions of Section B, Section D and Clause H1.4(a)(ii), (iii) and (b).
- (b) The maximum slope of tiered seating must not exceed 34 degrees when measured from the horizontal plane.
- (c) Aisles must be evenly spaced throughout the structure and have -
 - (i) a minimum width of 1 m; and
 - (ii) the aggregate of aisle widths leading to an *exit* must be not less than the *required* width of that *exit*; and
 - (iii) no one aisle may serve more than-
 - (A) 120 patrons where individual seating with backs is provided; or
 - (B) 200 patrons in any other case.
- (d) When applying the balustrading requirements of the deemed-to-satisfy provisions of Section D, the height of plat balustrading that directly abuts seating (i.e. with no aisle between the seat and the balustrading) must be measured from the plat or seat base whichever is the higher.
- (e) Transverse aisles must be provided at a horizontal distance of not more than 10 m between any row of seats.
- (f) All individual moveable seats must be -
 - (i) fixed in groups of not less than four; and
 - (ii) not used in stepped or ramped seating areas.
- (g) For any spectators' embankment -
 - (i) where the rear slope exceeds 1 in 5, a guard rail must be installed with no openings except at the heads of steps or ramps; and

- (ii) where the forward or front slope exceeds 1 in 8, the embankment must be stepped with plats not less than 500 mm wide and risers not greater than 230 mm high.
- (h) Guard rails must be installed to protect any fence, balustrade or railing associated with stepped or ramped standing spaces where excess pressure is expected from spectators.

Vic H102.3 Motor vehicle racing

Motor vehicle racing barriers and guard rails must be provided so as to comply with the following:

- (a) CAMS "Track Operators Safety Guide".
- (b) For stock car racing, barriers installed-
 - (i) on the outer margin of the track: a continuous concrete, close boarding or long guard barrier having a height of not less than 900 mm; and
 - (ii) on all curved sections of the track within 3 m of the barrier described in (i): a stout welded or woven wire mesh fence adequately supported having a height of not less than 1.8 m above the adjacent spectators viewing areas; and
 - (iii) between the public viewing area and the fence described in (ii): a suitable crowd barrier that will prevent spectators entering within 1.2 m of that fence.

Vic H102.4 Sanitary and amenity facilities

Sanitary and amenity facilities in places of public entertainment must be provided as follows:

- (a) In places other than buildings:
 - (i) One closet fixture for every 200 female patrons or part thereof.
 - (ii) One closet fixture or urinal for every 200 male patrons or part thereof, at least 30% of which must be in the form of closet fixtures.
 - (iii) One washbasin for every 200 patrons or part thereof.
 - (iv) For use by disabled persons, one unisex facility within the meaning of the deemed-to-satisfy provisions of Part F2 of the BCA for every 100 closet fixtures or part thereof *required* under (i) and (ii).

- (v) One drinking fountain or drinking tap for every washbasin *required* under (iii).
- (vi) First aid facilities in accordance with Vic F2.101.
- (b) In buildings, as required to comply with the deemed-to-satisfy provisions of Part F2.

Add Vic Part H103 as follows:

Vic Part H103 FIRE SAFETY IN CLASS 2 AND CLASS 3 BUILDINGS

Note: There are no performance requirements for Vic Part H103 - Fire Safety in Class 2 and Class 3 Buildings as the Part contains only additional deemed-to-satisfy provisions for Sections C, D and E for Class 2 and Class 3 buildings.

Vic H103.1 Fire safety in Class 2 and Class 3 buildings

- (a) A Class 2 or Class 3 building not more than 25 m in *effective height* that has a sprinkler system complying with Specification E1.5 installed throughout the building may be constructed in accordance with (b) provided that-
 - (i) where a sprinkler system complying with AS 2118.4, as applicable, is installed in the building the system is connected to a fire station in accordance with Practice Note No. 07 if-
 - (A) it has more than 100 sprinkler heads; or
 - (B) in the case of a Class 3 building used as accommodation for the aged, children or people with disabilities, the building will accommodate more than 32 residents; and
 - (ii) the sprinkler system is fitted with sprinklers complying with Clause 2.6 of AS 2118.4 in bedrooms; and
 - (iii) an *automatic* smoke detection and alarm system is installed in accordance with Specification E2.2a, except that it need not be connected to a fire station and in the case of a Class 3 building used as accommodation for the aged, children or people with disabilities must be installed in accordance with-
 - (A) Specification E2.2a Clause 4; or

- (B) (aa) Specification E2.2a Clause 3 provided Clause 3(c)(ii) is applied as if the building was not protected with a sprinkler system; and
 - (bb) Practice Note No. 07; and
 - (iv) in a Class 3 building used as accommodation for the aged, children or people with disabilities, the *automatic* smoke detection and alarm system and the sprinkler system are connected to an alarm panel constructed in accordance with Practice Note No. 07; and
 - (v) fire orders are provided in a Class 3 building in accordance with G4.9.
- (b) Subject to compliance with (a), the following concessions are permissible:
- (i) C3.11 - deletion of the requirement for *self-closing* fire doors or solid-core doors (except those opening to fire-isolated *exits*).
 - (ii) Specification C1.1 - deletion of the requirement for *internal walls* to have an FRL, except that walls bounding *public corridors* must be-
 - (A) clad in *non-combustible* material; and
 - (B) extend to the underside of a *non-combustible* roof covering or to the underside of the ceiling and be designed to minimise smoke spread to the corridor; and
 - (C) not incorporate any penetrations above door head height unless the penetrations are adequately stopped to prevent the free passage of smoke.
 - (iii) D1.3 - deletion of the requirement for stairways that serve not more than 5 *storeys* to be *fire-isolated stairways* provided-
 - (A) the stairway is smoke enclosed with construction that complies with D2.6 (except D2.6(a) and (b)(i)); and
 - (B) in a Class 3 building, *storeys* 4 and 5 are served by a minimum of 2 smoke enclosed stairways.
 - (iv) D1.4(a)(i)(A) - except in a Class 3 building used as accommodation for the aged, children or people with disabilities, the maximum distance of travel may be increased from 6 m to 12 m.

- (v) D1.5(c)(i) - except in a Class 3 building used as accommodation for the aged, children or people with disabilities, the maximum distance between alternative *exits* may be increased from 45 m to 60 m.
- (vi) E1.3 - deletion of the requirement for internal hydrants in buildings that have a *rise in storeys* of not more than 5 provided -
 - (A) an external hydrant is installed in accordance with E1.3 except that in a building other than a Class 3 building used as accommodation for the aged, children or people with disabilities, the nozzle at the end of the length of hose need only reach the entry door of any *sole-occupancy unit* to be considered as covering the *floor area* within the *sole-occupancy unit*; or
 - (B) a dry fire main fitted with standard hydrant heads is installed in the building provided that-
 - (aa) each hydrant head is located in accordance with E1.3 and fitted with a blank cap or plug; and
 - (bb) the pipework is installed in accordance with E1.3 (as if it were a fire main suitable for that building) except that it does not need to be connected to a water supply; and
 - (cc) a booster inlet connection is provided in accordance with E1.3; and
 - (dd) an external hydrant is located within 60 m of the booster connection .
- (vii) E1.4 - deletion of the requirement for hose reels in buildings that have a *rise in storeys* of not more than 5 provided the building is protected by
 - (A) hydrants that comply with E1.3; or
 - (B) dry fire mains in accordance with (vi)(B).
- (viii) E4.9 - deletion of the requirement for an emergency warning and intercommunication system in a Class 3 building used as accommodation for the aged, children or people with disabilities provided an intercom system with override public address facility is installed in accordance with Practice Note No. 08.

Footnote:

SPECIAL REQUIREMENTS FOR CERTAIN BUILDINGS AND COMPONENTS

In addition to any applicable provisions of the Building Act 1993, the Building Regulations 1994 and this Code, there are a number of technical building design and construction requirements of which practitioners should be aware. The following is a list of some of these:

- 1. Abattoirs, knackeries**
 - 1.1 Authority: Department of Natural Resources and Environment
 - 1.2 Relevant legislation: Meat Industry Act 1993, Meat Industry Regulations 1994
- 2. Accommodation - Residential (boarding houses, guest houses, hostels, motels)**
 - 2.1 Approval authority: Municipal council
 - 2.2 Relevant legislation: Health Act 1958, Health (Prescribed Accommodation) Regulations 1990
- 3. Accommodation - Supported Residential Services**
 - 3.1 Approval authority: Department of Human Services
 - 3.2 Relevant legislation: Health Services Act 1988, Health Services (Residential Care) Regulations 1991
 - 3.3 Design codes: Residential Care Design Guidelines
- 4. Alpine Resorts - approval of construction**
 - 4.1 Approval authority: Alpine Resorts Commission
 - 4.2 Relevant legislation: Alpine Resorts Act 1983
- 5. Children's Services Centres**
 - 5.1 Approval authority: Pre-school and Child Care, Primary Care Division, Department of Human Services
 - 5.2 Relevant legislation: Health Act 1958, Children's Services Centres Regulations 1988
 - 5.3 Design codes: Design brief for long day care centres and supplements
- 6. Crematoria, vaults, mortuary churches, etc**
 - 6.1 Approval authority: Cemeteries and Crematoria Unit, Public Health Division, Department of Human Services, cemetery trusts
 - 6.2 Relevant legislation: Cemeteries Act 1958
- 7. Crown land - construction approval**
 - 7.1 Approval authority: Crown Land and Assets Division, Department of Natural Resources and Environment
 - 7.2 Relevant legislation: Crown Land (Reserves) Act 1978

- 8. Dairies**
- 8.1 Authority: Department of Natural Resources and Environment
- 8.2 Relevant legislation: Dairy Industry Act 1992
- 9. Dried fruit establishments**
- 9.1 Authority: Department of Natural Resources and Environment
- 9.2 Relevant legislation: Dried Fruits Act 1958, Dried Fruits Regulations 1988
- 10. Electrical installations**
- 10.1 Approval authority: State Electricity Commission or local supply authority in some metropolitan areas
- 10.2 Relevant legislation: Electricity Industry Act 1993, Electric Light and Power Act 1958, State Electricity Commission Act 1958, SEC Wiring Regulations 1992
- 10.3 Design codes: SAA Wiring Rules, AS 3000/3013
- 11. Fences - (dividing fences)**
- 11.1 Relevant legislation: Fences Act 1968
- 11.2 Appeal body: Magistrates' Court
- 12. Fire prevention in existing buildings**
- 12.1 Authority: Municipal council
- 12.2 Relevant legislation: Building Act 1993, Building Regulations 1994, Health Act 1958
- 12.3 Design codes: Guidelines for achieving fire safety when recycling a building, AUBRCC 1992
- 12.4 Appeal body: Building Appeals Board (Building Act only)
- 13. Food premises**
- 13.1 Approval authority: Municipal council
- 13.2 Relevant legislation: Food Act 1984
- 14. Gas installations**
- 14.1 Approval authority: Gas and Fuel (Gascor)
- 14.2 Relevant legislation: Gas Industry Act 1994, Gas and Fuel Corporation (Gas Installation) Regulations 1992
- 14.3 Design codes: Gas Installation Code AG601 1992
- 15. Historic buildings**
- 15.1 Approval authority: Historic Buildings Council
- 15.2 Relevant legislation: Historic Buildings Act 1981
- 16. Hospitals, nursing homes, health care buildings**
- 16.1 Approval authority: Department of Human Services
- 16.2 Relevant legislation: Health Act 1958, Mental Health Act 1986

17. Lifts installations

- 17.1 Approval authority: Health and Safety Organisation
- 17.2 Relevant legislation : Lifts and Cranes Act 1967, Occupational Health and Safety Act 1985, Occupational Health and Safety (Plant) Regulations 1995
- 17.3 Design codes: AS 1735 Lifts, escalators and moving walks, OHS 25 Code of practice for lifts

18. Movable dwellings (in caravan parks)

- 18.1 Approval authority :Municipal council
- 18.2 Relevant legislation: Caravan Parks and Movable Dwellings Act 1988, Caravan Parks and Movable Dwellings (Registration and Standards) Regulations 1993
- 18.3 Appeals body: Caravans Parks Committee c/o Office of Local Government, Department of Infrastructure

19. Occupational health and safety

- 19.1 Approval authority: Health and Safety Organisation
- 19.2 Relevant legislation: Occupational Health and Safety Act 1985, Occupational Health and Safety (Lead Control) Regulations 1988, Occupational Health and Safety (Asbestos) Regulations 1992, Dangerous Goods Act 1985, Dangerous Goods (Explosives) Regulations 1988, Dangerous Goods (Transport) Regulations 1987, Dangerous Goods (Storage and Handling) Regulations 1989, Dangerous Goods (Liquefied Gases Transfer) Regulations 1987, Health Act 1958
- 19.3 Design codes: Various codes of practice published by the Authority

20. Pharmacies

- 20.1 Approval authority: Pharmacy Board of Victoria
- 20.2 Relevant legislation: Pharmacists Act 1974, Pharmacists Regulations 1992
- 20.3 Design codes: Guidelines for Good Pharmaceutical Practice 1993

21. Planning controls

- 21.1 Approval authority: Municipal council, in some cases the Minister for Planning and Local Government
- 21.2 Relevant legislation: Planning and Environment Act 1987
- 21.3 Design codes: Planning schemes
- 21.4 Appeal body: Administrative Appeals Tribunal

22. Prisons and gaols

- 22.1 Approval authority: Correctional Services, Department of Justice
- 22.2 Relevant legislation: Corrections Act 1986

23. Radiation safety

- 23.1 Approval authority: Radiation Safety Unit, Public Health Division, Department of Human Services
- 23.2 Relevant legislation: Health Act 1958, Health (Radiation Safety) Regulations 1994
- 23.3 Design codes: AS 2398-1980 Fixed Diagnostic X-ray Equipment - Design Construction and Installation, other Australian standards and codes of practice

24. Schools (non-government)

- 24.1 Approval authority: Registered Schools Board
- 24.2 Relevant legislation: Education Act 1958

25. Sanitary plumbing, water supply and sewerage

- 25.1 Approval authority: Melbourne Water in metropolitan area, sewerage and water supply authorities in country areas
- 25.2 Relevant legislation: Water Act 1989, Victoria Water Supply and Sewerage Plumbing Regulations 1994
- 25.3 Design codes: AS 3500 National Plumbing and Drainage Code 1990

26. Septic tank installations

- 26.1 Approval authority: Municipal council, Environment Protection Authority (discharge > 5000 l/day)
- 26.2 Relevant legislation: Environment Protection Act 1970
- 26.3 Design codes: Septic Tanks Code of Practice 1990

27. Subdivision of buildings

- 27.1 Approval authority: Municipal Council
- 27.2 Relevant legislation: Subdivision Act 1988

APPENDIX

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WESTERN AUSTRALIA

INTRODUCTION

This Appendix contains variations and additions to the Building Code of Australia (BCA) provisions which are considered necessary for the effective application of the Code in Western Australia.

WESTERN AUSTRALIA - BCA APPENDIX

CONTENTS

This Appendix contains the BCA provisions that have been varied and additional provisions for application in Western Australia as follows:

F - HEALTH AND AMENITY

WA FO2	Objective
WA FF2.4	Functional Statements
WA FP2.5	Performance Requirements
WA F2.5	Construction of sanitary compartments

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SECTION F HEALTH AND AMENITY

PART F2 SANITARY AND OTHER FACILITIES

OBJECTIVE

Delete FO2 and insert WA FO2 as follows:

WA FO2 The objective of this Part is to-

- (a) safeguard occupants from illness caused by infection; and
- (b) safeguard occupants from loss of amenity arising from the absence of adequate personal hygiene facilities; and
- (c) enable occupants to carry out laundering; and
- (d) provide for facilities to enable food preparation; and
- (e) enable unconscious occupants of *sanitary compartments* to be removed from the compartment.

FUNCTIONAL STATEMENTS

After FF2.3 add WA FF2.4 as follows:

WA FF2.4 A *sanitary compartment* is to have sufficient space or other means to permit an unconscious occupant to be removed from the compartment.

PERFORMANCE REQUIREMENTS

After FP2.4 add WA FP2.5 as follows:

WA FP2.5 A *sanitary compartment* must be constructed with sufficient space or other means to enable an unconscious occupant to be removed from the compartment.

DEEMED-TO-SATISFY PROVISIONS

Delete F2.5 and insert WA F2.5 as follows:

WA F2.5 Construction of sanitary compartments

- (a) Other than in an *early childhood centre*, *sanitary compartments* must have doors and partitions that separate adjacent compartments and extend-
- (i) from floor level to the ceiling in the case of a unisex facility; or
 - (ii) to a height of not less than 1500 mm above the floor if primary *school* children are the principal users; or
 - (iii) 1800 mm above the floor in all other cases.
- (b) The door to a fully enclosed *sanitary compartment* must -
- (i) open outwards; or
 - (ii) slide; or
 - (iii) be readily removable from the outside,
- unless there is a clear space of at least 1.2 m between the closet pan within the *sanitary compartment* and the nearest part of the doorway.

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ABBREVIATIONS AND SYMBOLS

Abbreviations and Symbols used in the BCA include:

ABBREVIATIONS

ABCB	Australian Building Codes Board
AISC	Australian Institute of Steel Construction
ALGA	Australian Local Government Association
AS	Australian Standard
ASTM	American Society for Testing and Materials
BCA	Building Code of Australia
BCC	Building Codes Committee
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DBC&E	CSIRO Division of Building, Construction and Engineering
FRL	Fire Resistance Level
GRP	glass fibre reinforced polyester
ISO	International Organisation for Standardisation
NATA	National Association of Testing Authorities
NBTC	CSIRO National Building Technology Centre
PVC	polyvinyl chloride
SSL	Scientific Services Laboratory
STC	Sound Transmission Class
UPVC	unplasticised polyvinyl chloride

SYMBOLS (SI UNITS)

dB(A)	decibels "A" scale weighting network
°C	degree(s) Celsius
K	kelvin(s)
kg	kilogram(s)
kg/m	kilogram(s) per metre
kg/m ²	kilogram(s) per square metre
kg/m ³	kilogram(s) per cubic metre
kPa	kilopascal (s)
kW/m ²	kilowatt(s) per square metre
L	litre(s)
L/s	litre(s) per second
L/s.m ²	litre(s) per second square metre
lx	lux
m	metre(s)
m ²	square metre(s)
m ³	cubic metre(s)
m/s	metre(s) per second
m ³ /s	cubic metre(s) per second
mm	millimetre(s)
mm ²	square millimetre(s)
µm	micrometer
MW	megawatt(s)
N	newton(s)
Pa	pascal(s)

HISTORY OF AMENDMENTS

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