

NORTHERN TERRITORY OF AUSTRALIA
NORTHERN TERRITORY BUILDING CODE
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NORTHERN TERRITORY OF AUSTRALIA

Regulations 1984, No. 27*

Regulations under the *Building Act*

I, ERIC EUGENE JOHNSTON, the Administrator of the Northern Territory of Australia, acting with the advice of the Executive Council, hereby make the following Regulations under the *Building Act*.

Dated this first day of May, 1984.

E.E. JOHNSTON
Administrator

NORTHERN TERRITORY BUILDING CODE

PART I - PRELIMINARY

1.1 CITATION

These Regulations may be cited as the Northern Territory Building Code.

1.2. COMMENCEMENT

This Code shall come into operation on the commencement of the *Building Act 1983*.

1.3 APPLICATION

This Code does not apply to or in relation to a building used by a builder during the construction of another building and readily removable on completion of the other building.

* Notified in the *Northern Territory Government Gazette* on 16th May, 1984.

G. L. DUFFIELD, Government Printer of the Northern Territory

Price: \$11.80

Northern Territory Building Code

1.4 INTERPRETATION

Definitions

(1) In this Code, unless the contrary intention appears -

"access", in relation to a building, or a facility provided in or in relation to a building, where access is required for handicapped persons, means a continuous path of travel extending from the alignment of the street which adjoins the site on which the building is situated to the building or facility, the path of travel -

- (a) incorporating the required access and facilities for handicapped persons; and
- (b) not incorporating a stairway, turnstile, revolving door, escalator or installation or building feature which could not be negotiated by a person confined to a wheelchair;

"AS" means Australian Standard, being a standard approved for publication on behalf of the Council of the Standards Association of Australia;

"assembly building" means a building designed, constructed or adapted for the assembly of persons for -

- (a) civic, political, educational, transit, religious, social or recreational purposes;
- (b) entertainment or amusement; or
- (c) the consumption of food or drink;

"automatic", in relation to -

- (a) a fire door, smoke door or other member required to prevent or restrict the spread of fire or smoke through an opening - means designed to close by the operation of an approved heat-actuated or smoke-actuated device; and
- (b) a smoke-and-heat vent - means designed to open by the operation of an approved heat-actuated or fire sensing device;

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"certificate of occupancy", in relation to a building, means the certificate set out in Form 1 issued in relation to the building, being the prescribed certificate for the purposes of section 40(2), (3) and (6) of the Act;

"closet fixture" includes a water closet pan, sanitary pan, urinal and other receptacle for night soil;

"combustible", in relation to -

(a) a material - means combustible in accordance with AS 1530 Part 1; and

(b) the construction of a building - means constructed wholly or partly of materials that are combustible as referred to in paragraph (a);

"construct" includes erect;

"curtain wall" means a non-loadbearing external wall other than a panel wall;

"Director" means the Director within the meaning of the *Fire Service Act*;

"effective distance" means effective distance within the meaning of regulation 16.4(4);

"exit" means -

(a) an internal or external stairway;

(b) a ramp;

(c) a fire-isolated passageway; or

(d) a doorway which opens onto a street or open space,

or a combination of 2 or more such exits which provide egress from a storey, or a space in the nature of a storey, to a street or open space;

"external wall", in relation to a building, means an outer wall of the building;

"fire main" means a water service pipe -

(a) connected to a water supply; and

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- (b) installed within a building or on a site, for fire-fighting purposes;

"fire-isolated passageway" means a corridor, hallway or the like which -

- (a) provides egress to or from a fire-isolated stairway, fire-isolated ramp, street or open space; and
- (b) is enclosed by walls, floors and ceilings which have a fire-resistance rating of not less than one hour;

"fire-isolated ramp" means a ramp, within a fire-resisting enclosure, which provides egress from a storey or space in the nature of a storey;

"fire-isolated stairway" means a stairway within a fire-resisting shaft, including the floors and top enclosing structure of the stairway;

"fire-resistance rating", in relation to a structural member or other part of a building, means the fire-resistance grading, as determined in accordance with the standard fire test, of the structural member or other part;

"fire-resisting", in relation to -

- (a) a structural member or other part of a building - means having the fire-resistance rating required for the structural member or other part; and
- (b) a shaft - means having the fire-resistance rating required for the shaft, and includes -
 - (i) the top enclosing structure of the shaft; and
 - (ii) where the shaft does not extend to the foundation of the building in which it is situated - the enclosing structure of the bottom of the shaft;

"fire-resisting construction" means one of the types of construction referred to in Part 16;

"fire-source feature" means fire-source feature within the meaning of regulation 16.4(1);

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"fire wall" means an internal wall which divides a building or storey into parts to resist the spread of fire;

"fire zone" means a primary or secondary fire zone;

"flammability index", in relation to a material, means the index number for flammability, as determined in accordance with AS 1530 Part 2, for the material;

"floor area", in relation to -

- (a) a storey - means the gross area of the storey measured over the enclosing walls, if any; and
- (b) a room - means the gross area of the room measured within the finished surfaces of the walls of the room, and includes the area occupied by cupboards or other built-in furniture, fixtures or fittings in the room;

"foundation", in relation to a building, means the ground which supports the building;

"free-standing wall" means a wall -

- (a) not subject to a superimposed load, other than wind load; and
- (b) which has no effective lateral support;

"habitable room" -

- (a) includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, sunroom, sundeck, verandah, balcony and the like that is designed, constructed or adapted for the activities normally associated with domestic living; but
- (b) does not include a bathroom, shower room, laundry, closet fixture, room or space for food-storage, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room and other spaces of a specialized nature not occupied frequently or for an extended period;

"hydrant" means a fire hydrant or plug connected to a fire main or water main in a street;

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"institutional building" means a building designed, constructed or adapted as a clinic, convalescent home, hospital, infirmary, nursing home, sanatorium, asylum, pre-school centre, home or institute for orphans or poor, aged, sick or physically or mentally handicapped persons, or like institution;

"internal wall", in relation to a building, means the wall of a building other than an external wall;

"kiosk" means a stall or apartment -

- (a) enclosed by walls;
- (b) which the public does not enter; and
- (c) which is used for the sale or distribution of goods or services;

"laundry" means a building designed, constructed or adapted primarily for the washing of clothes or other laundering purposes;

"lightweight construction" means that variety of fire-resisting construction -

- (a) in which the construction affording fire-resistance is -
 - (i) not in continuous contact with the principal construction that it fire-resists; or
 - (ii) of sheet or board material, plaster, render, sprayed application, or other material likewise susceptible to damage by pressure or abrasion; or
- (b) which incorporates or comprises -
 - (i) concrete which contains pumice, perlite, vermiculite or other soft material; or
 - (ii) masonry less than 70 mm in thickness;

"loadbearing", in relation to a structural member, means the structural member is intended to support a vertical load in addition to its own weight;

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"maintained item", in relation to equipment, a sign, state or condition, means equipment, a sign, state or condition which is required to be kept in a state of continuing compliance with Part 59 for the purposes of the inspections, tests and maintenance referred to in that Part;

"masonry" means stone, brick, terra-cotta block, concrete block and other types of building units, or a combination of such units, assembled together unit by unit to form a wall, pier, chimney or other part of a building;

"mezzanine" means the space within a room which is situated between an intermediate floor constructed within the room and the floor level immediately above or, if there is no floor immediately above, the ceiling or roof above, and in which the intermediate floor does not extend across the full area of the room;

"nearest part of an exit", in relation to an exit, means the nearest part of the exit as determined in accordance with the provisions of regulation 24.29 applicable to the exit;

"non-combustible", in relation to -

(a) a material - means non-combustible in accordance with AS 1530 Part 1, and includes -

(i) plasterboard;

(ii) perforated gypsum lath with a normal paper finish; and

(iii) fibrous-plaster sheet which complies with AS 2185; and

(b) the construction of a building - means constructed wholly of materials that are non-combustible as referred to in paragraph (a);

"open-deck parking station" means a parking station in which all parts of each parking storey of the parking station are cross-ventilated by means of permanent openings in not less than 2 opposing sides, the opening or openings in any one such side being not smaller in unobstructed area than half the vertical area of the side;

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"open space" means a space -

- (a) on a site;
- (b) open to the sky; and
- (c) connected directly with a street;

"panel wall" means a non-loadbearing external wall, in frame or like construction, that is wholly supported at each storey;

"partition wall" means -

- (a) a non-loadbearing internal wall that does not extend beyond one storey of a building; or
- (b) a non-loadbearing member resembling an internal wall;

"planning area" means an area of land subject to a planning instrument;

"Planning Authority" means the Northern Territory Planning Authority established under section 7 of the *Planning Act*;

"plot ratio", in relation to a site, means the number obtained by dividing the total floor area of the building or buildings, if any, on the site by the area of the site;

"prefabricated manufactured building" means a building produced in a factory to a stage of completion or near completion and which is transported to the site on which it is to be constructed, but does not include a caravan;

"pre-school centre" means a building, other than a school, designed, constructed or adapted for the pre-school care or training of not less than 6 children;

"primary fire zone" means an area declared under regulation 5.3(1) to be a primary fire zone;

"private garage" means -

- (a) a garage of a Class I building; or
- (b) a single storey -
 - (i) of a building other than a Class I building; and

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- (ii) capable of accommodating not more than 3 vehicles;

"public corridor" means a corridor, hallway or the like which -

- (a) serves as a means of egress from 2 or more sole-occupancy units to an exit from the storey in which it is situated; or
- (b) is provided as a means of egress from a part of the storey in which it is situated to an exit;

"public garage" means a garage which is not -

- (a) a private garage; or
- (b) designed, constructed or adapted for the servicing of vehicles, other than the washing, cleaning or polishing of vehicles;

"required" means required under this Code;

"rise", in relation to a building, means the number of storeys, as calculated in accordance with regulation 17.2, of the building above the ground;

"running water pressure", in relation to a fire main or water service pipe, means the water pressure which a pressure gauge attached to the main or pipe indicates, or would indicate, under flowing conditions in the main or pipe;

"sarking-type material" includes reflective foil and other flexible membranes of a type normally used for water proofing, vapour proofing or thermal reflectance;

"school" includes a university, agricultural college, teachers training college, school of mines, theological college and like establishment designed, constructed or adapted for tertiary education;

"secondary fire zone" means an area declared under regulation 5.3(1) to be a secondary fire zone;

"self-closing", in relation to a door or window, means equipped with an approved device designed to bring the door or window to the fully closed and latched position immediately after a manual opening of the door or window;

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"service station" means a garage which is -

- (a) not a private garage or a public garage;
and
- (b) designed, constructed or adapted for the servicing of vehicles,

regardless of whether or not washing, cleaning or polishing of vehicles is also carried out in the garage;

"shaft" includes a well or vertical chute, duct or like passage formed by the walls and other parts of a building, but does not include a chimney or other part of a building intended for the discharge of the hot products of combustion;

"site" means an allotment of land on which a building stands or is proposed to be constructed;

"smoke-and-heat vent" means a vent, which complies with AS 2427, situated in or near the roof of a building, to provide a means for the escape of smoke and hot gases in the event of an outbreak of fire in the building;

"smoke-developed index", in relation to a material, means the index number for smoke developed, as determined in accordance with AS 1530 Part 3, for the material;

"sole-occupancy unit" means a room or other part of a building designed, constructed or adapted for occupation by one owner, lessee, tenant or other occupier of the building to the exclusion of another owner, lessee, tenant or occupier of the building;

"solid", in relation to a wall, means without cavities, vertical cores, holes or other voids, other than those included within its individual masonry units;

"sound transmission class", in relation to a material, means the single number evaluation of the property of the material to attenuate airborne sound transmission;

"spread-of-flame index", in relation to a material, means the index number for spread of flame, as determined in accordance with AS 1530 Part 3, for the material;

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"sprinkler system" means a system of water sprinklers within a building set to discharge water automatically where the air in the building reaches a pre-determined temperature;

"stairway" includes the treads and risers of a flight of stairs and the landings between flights of stairs;

"Standards Association of Australia" means the association of that name incorporated by royal charter;

"standard fire test" means the fire-resistance test of materials and structures set out in -

(a) for a material - AS 1530 Part 3; and

(b) for a structure - AS 1530 Part 4;

"storey" means the part within a building which is situated between one floor level and the floor level immediately above or, where there is no floor immediately above, the ceiling or roof immediately above, but does not include -

(a) a part of the building in which the only use for which the part is designed, constructed or adapted is for the accommodation of -

(i) a lift shaft, stairway or meter room;

(ii) a bath, shower, laundry or closet fixture; or

(iii) not more than 3 vehicles; or

(b) a mezzanine;

"street" means a public street within the meaning of the *Traffic Act*;

"structural member" means a part of the structure of a building and includes a footing, column, pier, wall, curtain wall, panel wall, spandrel, parapet, partition wall, shaft, floor, roof, ceiling, stair, landing, ramp, balcony, or other part, or supporting part, of the structure of the building;

"this Code" means these Regulations;

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"tropical cyclone area" means that part of the Territory comprised within the area specified in clause 6.3(b) of AS 1170 Part 2 (being an area not more than 50 kilometres inland from the coast north of latitude 27°);

"window" -

- (a) includes a roof light, glass panel, glass brick, glass louvre, glazed sash, glazed door and other device capable of transmitting natural light directly from the exterior of a building to a room; but
- (b) does not include a door or other device not capable of transmitting natural light from the exterior of a building to a room where the door or other device is in the closed position.

References to buildings in being, abbreviations, symbols for units, and numerical values

(2) In this Code, unless the contrary intention appears -

- (a) language which refers to a building in being shall also be construed, with all necessary changes, as referring to a proposed building, so that, without limiting the generality of the foregoing, a reference to -
 - (i) the owner of a building shall also be construed as a reference to the person who, if the proposed building were then completed, would be its owner;
 - (ii) a structural member of certain materials shall also be construed as a reference to a proposed structural member which, if constructed as proposed, would be of those materials; and
 - (iii) the purpose of a building shall also be construed as a reference to the purpose for which a proposed building is to be used on its completion;
- (b) abbreviations and symbols for units and multiples and sub-multiples of units have the same meaning as they have ascribed to them in AS 1155; and

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- (c) unless otherwise provided, the numerical values specified in this Code are subject to tolerances in accordance with the standard, code or specification to which the numerical values relate, normal trade practice or good practice, as the case may be.

Forms, tables, figures, specifications and appendices

(3) In this Code, unless the contrary intention appears, a reference to -

- (a) a form by number is a reference to the form so numbered in Schedule 1; and
- (b) a table, figure, specification or appendix by number is a reference to the table, figure, specification or appendix so numbered in this Code.

Directions, &c., specified in relation to forms, tables, figures, specifications and appendices

(4) A form, table, figure, specification or appendix referred to in sub-regulation (3) shall be completed or interpreted in accordance with such directions and instructions, if any, as are specified in, on, or in relation to, the form, table, figure, specification or appendix.

References to Australian Standards

(5) A reference in this Code to an Australian Standard by number is a reference to -

- (a) the edition of the title and date, together with amendments, specified in Schedule 2 in relation to that number; and
- (b) so much only of the Australian Standard as is relevant in the context in which the Australian Standard is quoted.

1.5 INSPECTION OF DOCUMENTS

Where a provision of this Code requires compliance with a document, including an Australian Standard, not forming part of this Code, the Building Controller shall make the document available for inspection at -

- (a) the office of the Building Controller; and
- (b) such other places as the Building Controller thinks fit.

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1.6 ALTERATIONS TO CERTAIN EXISTING WORKS

Building work to be carried out on existing, &c., structural members

(1) Where building work is to be carried out on a structural member which was -

- (a) in existence before the commencing date; or
- (b) completed under Part VII of the Act,

and which will -

(c) affect not less than half the structural member, the building work shall not be carried out except where the whole of the structural member is brought into compliance with the requirements of this Code applicable to it, as if, for that purpose, the structural member had not been -

- (d) in existence before the commencing date; or
- (e) completed under Part VII of the Act,

as the case may be.

Structural alterations to existing buildings

(2) Subject to regulation 6.5, where building work to be carried out on a building involves alterations to the structure of the building, the Building Controller shall not give building approval to the building work except where he is satisfied that those alterations will not unduly reduce the building's existing -

- (a) level of fire-protection for persons using the building;
- (b) level of fire-resistance; and
- (c) safeguards against the spread of fire to adjoining buildings.

Building Controller may require whole building to comply

(3) Subject to regulation 6.5, where building work to be carried out on a building involves alterations to the structure of the building, the Building Controller may, where -

- (a) those alterations, together with other structural alterations, if any, completed or approved prior to the application under section 28(1) of

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the Act in relation to the building work, comprises more than half the total volume of the building, measured over its roof and between its external walls, as it was immediately before that period; or

(b) he is of the opinion that -

- (i) the safety of persons using the building;
or
- (ii) the risk of the spread of fire to adjoining buildings,

so warrants,

require that that building work not be carried out except where the whole building is brought into compliance with the requirements of this Code applicable to it.

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PART 2 - LEGAL PROCEEDINGS AND NOTICES

No provisions.

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PART 3 - ENFORCEMENT AND INSPECTIONS

3.1 INSPECTIONS

Building Controller to specify when inspections to occur

(1) The Building Controller shall specify the stages during the progress of building work at which the building work shall be inspected and, in the course of such an inspection, he may make or cause to be made such tests in relation to the building work as he thinks fit.

Owner of building, &c., to call for inspections

(2) The owner of a building the subject of building work, or a person authorized by the owner, shall call for the building work to be inspected at each stage of the building work which the Building Controller has specified as a stage during the progress of building work at which building work shall be inspected.

Inspection record to be issued upon completion of inspection

(3) Where an inspection referred to in sub-regulation (1) is completed, the Building Controller shall serve, on the person apparently in charge at the site at which the building work the subject of the inspection is being undertaken, an inspection record, in duplicate, in the approved form.

Copy of inspection record to be available for inspection by certain persons

(4) A copy of an inspection record referred to in sub-regulation (3) shall be available for inspection -

- (a) at the office of the Building Controller during normal office hours;
- (b) without charge; and
- (c) to a person authorized by the owner of the building the subject of the record.

3.2 QUALIFICATIONS OF BUILDING INSPECTORS

For the purposes of section 10(2) of the Act, a building inspector shall have -

- (a) knowledge, satisfactory to the Building Controller, of the Act and this Code;

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- (b) an approved trade certificate; and
- (c) experience, satisfactory to the Building Controller, in the building industry.

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PART 4 - PENALTIES

No provisions.

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PART 5 - ESTABLISHMENT OF FIRE ZONES

5.1 REQUIREMENTS FOR PRIMARY FIRE ZONES

A primary fire zone shall -

- (a) be not less than 18,000 m² in area, measured exclusive of public reserves, public places, railways and rivers; and
- (b) include not less than 4 sites.

5.2 REQUIREMENTS FOR SECONDARY FIRE ZONES

A secondary fire zone shall -

- (a) be not less than 9,000 m² and not more than 18,000 m² in area, measured exclusive of public reserves, public places, railways and rivers; and
- (b) include not less than 4 sites.

5.3 MINISTER MAY DECLARE FIRE ZONES

Declaration of fire zones

(1) The Minister may, of his own volition, or on an application in the approved form by the council of a municipality, declare, by notice in the *Gazette*, an area of the municipality which -

- (a) in his opinion, requires, or will require, a high degree of fire-control for the buildings constructed on the area; and
- (b) complies with regulation 5.1 or 5.2,

to be a primary or secondary fire zone.

Declaration to include technical description or plan

(2) A declaration under sub-regulation (1) shall include -

- (a) a technical description; or
- (b) a plan,

of the area of the municipality the subject of the declaration.

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5.4 MAP AND REGISTER OF FIRE ZONES

Building Controller shall prepare and maintain map and register of fire zones

(1) The Building Controller shall, for each municipality -

- (a) cause to be prepared and maintained a map and a register of the fire zones, if any, within the municipality; and
- (b) where a fire zone is established in the municipality or the declaration of a fire zone in the municipality is varied or revoked - amend the map and register accordingly.

Details required on map

(2) A map referred to in sub-regulation (1) shall show -

- (a) the boundaries of each fire zone in the municipality to which the map relates; and
- (b) whether a fire zone referred to in paragraph (a) is a primary or secondary fire zone.

Details required on register

(3) The register referred to in sub-regulation (1) shall contain a copy of the *Gazette* notice referred to in regulation 5.3(1) which declares the fire zone in the municipality to which the register relates.

5.5 EFFECT OF ESTABLISHMENT OF FIRE ZONES

A building shall not be constructed in a fire zone unless it complies with the requirements of this Code for and in relation to the construction of buildings in fire zones as are applicable to the building.

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PART 6 - CLASSIFICATION OF BUILDINGS AND CERTIFICATES ISSUED IN RELATION TO BUILDINGS

6.1 CLASSIFICATION

Classes of buildings

(1) For the purposes of this Code, buildings shall be classified as -

- (a) Class I: single dwelling-houses;
- (b) Class II: buildings which contain not less than 2 sole-occupancy units;
- (c) Class III: residential buildings, being common places of abode for a number of unrelated persons, including -
 - (i) boarding-houses, guest-houses, hostels and lodging-houses;
 - (ii) the residential parts of hotels and motels;
 - (iii) the residential parts of schools;
 - (iv) the residential parts of institutional buildings which accommodate members of the staff of the institution; and
 - (v) sole-occupancy units other than sole-occupancy units referred to in paragraph (b) or (d);
- (d) Class IV: sole-occupancy units in Class V, VI, VII, VIII or IX buildings, being in each case the only sole-occupancy unit in the building;
- (e) Class V: office buildings, being buildings for professional or commercial purposes, but excluding Class VI, VII, VIII or IX buildings;
- (f) Class VI: shops and other buildings for the sale of goods by retail or the supply of services direct to the public, including -
 - (i) eating rooms, tea rooms, coffee rooms, cafes, restaurants and milk and soft-drink bars;
 - (ii) the non-residential parts of hotels and motels;
 - (iii) hairdresser's and barber's shops, public laundries and undertaker's establishments; and

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- (iv) markets, sale rooms, show-rooms and service stations;
- (g) Class VII: warehouses, being buildings for the storage of goods only or for the display of goods for sale by wholesale, and public garages;
- (h) Class VIII: factories and other buildings in which a storage or display of goods, handicraft or process in or incidental to the making, assembling, altering, repairing, renovating, preparing, ornamenting, finishing, cleaning, washing or adapting of goods is carried on for trade, sale or gain, including laboratories, which class is subdivided into -
 - (i) Class VIIla: such buildings not of abnormal fire hazard within the meaning of Appendix A to AS 2665; and
 - (ii) Class VIIlb: such buildings of abnormal fire hazard within the meaning of the Australian Standard referred to in subparagraph (i), other than a laboratory which, in the opinion of the Building Controller, is not subject to such abnormal fire hazard;
- (j) Class IX: buildings of a public nature, which class is subdivided into -
 - (i) Class IXa: institutional buildings; and
 - (ii) Class IXb: schools and other assembly buildings, other than parts of such buildings that are Class III buildings or used as laboratories; and
- (k) Class X: outbuildings.

Class VIIla, VIIlb, IXa and IXb buildings are separate classifications

(2) For the purposes of this Code, unless the contrary intention appears, Class VIIla, VIIlb, IXa and IXb buildings are separate classifications.

Principle of classification

(3) For the purposes of this regulation, the classification of a building is that classification which most fits the purpose for which the building is designed, constructed or adapted to be used.

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Multiple classification

(4) Subject to regulation 6.6, where parts of a building are used for different purposes, each such part shall be separately classified in accordance with this regulation.

6.2 DOUBTFUL CLASSIFICATIONS, &c.

Building Controller to determine doubtful classifications

(1) Where there is a doubt or dispute as to the classification of a building, the Building Controller shall, in accordance with the principle specified in regulation 6.1(3), determine the classification under regulation 6.1(1) of the building.

Effect of determination

(2) A determination under sub-regulation (1) of the classification under regulation 6.1(1) of a building shall, for the purposes of this Code, be the classification of the building.

6.3 CERTIFICATE OF OCCUPANCY

Application

(1) A reference in this regulation to a building is a reference to a building other than a Class I or X building.

Preparation of certificate of occupancy

(2) Where, after the commencing date, building approval is given to construct a building, the Building Controller shall -

- (a) on completion of the building; or
- (b) where the building is uncompleted and its occupation is approved,

prepare a certificate of occupancy in duplicate

Issue of original of certificate of occupancy

(3) The original of a certificate of occupancy shall be issued to the owner of the building the subject of the certificate.

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Duplicate of certificate of occupancy to be available for inspection

(4) The duplicate of a certificate of occupancy shall be available for inspection -

- (a) at the office of the Building Controller during normal office hours;
- (b) without charge; and
- (c) by a member of the public.

6.4 CERTIFICATES OF OCCUPANCY FOR EXISTING BUILDINGS WHERE NOT PREVIOUSLY ISSUED

Application

(1) A reference in this regulation to a building is a reference to a building, other than a Class I or X building -

- (a) constructed prior to the commencing date; and
- (b) in relation to which a certificate of occupancy has not been issued.

Preparation of certificate of occupancy

(2) Where written application for the issue of a certificate of occupancy in relation to a building is made by the owner of the building, or a person authorized in that behalf by the owner, the Building Controller shall prepare a certificate of occupancy in duplicate.

Issue of original of certificate of occupancy

(3) The original of a certificate of occupancy shall be issued to the person making the application under sub-regulation (2) in relation to the certificate.

Duplicate of certificate of occupancy to be available for inspection

(4) The duplicate of a certificate of occupancy referred to in sub-regulation (2) shall be available for inspection -

- (a) at the office of the Building Controller during normal office hours;
- (b) without charge; and
- (c) by a member of the public.

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6.5 CHANGE OF USE

Change of use of existing building

(1) The use of a building in existence before the commencing date shall not be changed from that of one class to that of another class unless the building complies with the requirements of this Code applicable to the new class.

Change of use in building constructed after commencing date

(2) A building constructed after the commencing date shall not be used for a purpose -

- (a) not specified in the certificate of occupancy; or
- (b) for which a certificate of occupancy is required to be,

issued in relation to the building, unless the building complies with the requirements of this Code applicable to the purpose.

Change of use of building to be notified to Building Controller

(3) Where a person proposes to make a change in the use of a building which would result in a change of classification under this Code of the building, he shall -

- (a) notify, in writing, the Building Controller of the nature of the proposed change of use; and
- (b) not make that change of use unless it is approved.

New certificate of occupancy

(4) Where a change in the use of a building is approved, the Building Controller shall -

- (a) revoke a certificate of occupancy, if any, in existence for the building prior to the change of use;
- (b) prepare a certificate of occupancy, in accordance with regulation 6.3, in relation to the new use; and
- (c) issue the original of the certificate of occupancy referred to in paragraph (b) to the person proposing the change of use.

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Offence

(5) A person shall not use or occupy, or permit the use or occupation of, a building in contravention of this regulation.

6.6 CLASSIFICATION WHERE PART OF STOREY HAS ANCILLARY USE

Where a part of a storey, not being a laboratory, is used for a purpose -

- (a) for which a classification different from the classification or classifications of the storey applies; but
- (b) ancillary to a purpose for which not less than 90% of the floor area of the storey is used,

the Building Controller may determine that the classification which applies to the major use of the storey shall apply to and in relation to the whole of the storey.

6.7 CERTIFICATE OF COMPLETION

Certificate of completion in relation to Class I and X buildings

(1) Where building approval is given for the construction of a building, the Building Controller shall, on completion of the building to his satisfaction, prepare a certificate of completion, in duplicate, in the approved form.

Issue of original of certificate of completion

(2) The original of a certificate of completion referred to in sub-regulation (1) shall be issued to the owner of the building the subject of the certificate.

Duplicate of certificate of completion to be available for inspection by certain persons

(3) The duplicate of a certificate of completion referred to in sub-regulation (1) shall be available for inspection -

- (a) at the office of the Building Controller during normal office hours;
- (b) without charge; and
- (c) to a person authorized by the owner of the building the subject of the certificate.

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6.8 PART V OF THE ACT NOT TO APPLY TO OR IN RELATION TO
CLASS I AND X BUILDINGS

For the purposes of section 39(1) of the Act, the prescribed class of buildings to which Part V of the Act does not apply to or in relation to is -

- (a) Class 1 buildings; and
- (b) Class X buildings.

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PART 7 - UNITED BUILDINGS

7.1 CERTAIN BUILDINGS DEEMED TO BE UNITED

Where 2 or more buildings which adjoin each other -

- (a) are connected through openings in the walls which divide them from one another; and
- (b) collectively comply with all the requirements of this Code as though they were a single building,

they shall, for the purposes of this Code, be deemed to be united to form one building.

7.2 ALTERATIONS IN UNITED BUILDING

Where an alteration is made in 2 or more buildings that are deemed under regulation 7.1 to have been united to form one building -

- (a) the united building; or
- (b) each building which forms a part of the united building,

shall, after the alteration, comply with all the requirements of this Code applicable to and in relation to a single building.

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PART 8 - BUILDING APPROVAL

8.1 APPLICATION FOR BUILDING APPROVAL

Form of application for building approval

(1) For the purposes of section 28(1) of the Act, the prescribed form for an application for building approval to construct a building is Form 2, which application may be for building approval -

- (a) for the entire building;
- (b) for stages of building approval; or
- (c) to demolish or remove the building.

Building Controller may require further information

(2) The Building Controller may require to be lodged with an application under sub-regulation (1) in relation to a building -

- (a) 2 copies of drawings which show the plan at each floor level, elevations, portions and dimensions of the building, the sizes and locations of structural members to a scale of not less than 1:100, together with such other details as are required by the Building Controller, drawn to a scale of not less than 1:20;
- (b) 2 copies of specifications which describe the materials to be used in the construction of the building and, where not indicated on the drawings referred to in paragraph (a), such other information as is necessary to show that the building would, if constructed in accordance with those specifications and drawings, comply with the requirements of this Code applicable to it;
- (c) 2 copies of a site plan to a scale of not less than 1:500 which show -
 - (i) the boundaries and dimensions of the site and relevant easements;
 - (ii) whether the site is at the intersection of streets and, if not, the situation of the site in relation to the nearest street corner;

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- (iii) the position and dimensions of the building and its relationship to the boundaries of the site and to existing buildings, if any, on the same site and adjoining sites, with details of the purposes for which the buildings are to be used;
- (iv) the levels of the site and of the floors of the building in relation to an adjoining street channel, if any; and
- (v) a copy of the stormwater drainage layout approved by the council of the municipality in which the building is to be constructed;
- (d) one copy of computations and reports to demonstrate that the building would, if constructed in accordance with those computations and reports, comply with the requirements of this Code applicable to it;
- (e) a survey plan, prepared by a licensed surveyor within the meaning of the *Licensed Surveyors Act*, of existing conditions;
- (f) evidence of ownership of the site on which the building is to be constructed;
- (g) other than for a Class I or X building, a certificate from the Commission within the meaning of the *Electricity Commission Act* stating whether or not an electricity supply substation is required on the site and, if so, the required size and situation of such substation;
- (h) where a certificate referred to in paragraph (g) requires the provision of a substation on the site, detailed information as to the substation in the drawings, specifications and plan to be submitted under, respectively, paragraphs (a), (b) and (c);
- (j) in the case of a re-construction of a building - a statement which describes the purposes for which the building has been used and is to be used; or
- (k) a copy of the drainage layout approved by the Director, Water Division of the Department of Transport and Works.

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Documents, &c., to be signed by author, &c.,

(3) A document, including a document which sets out or relates to computations, submitted under sub-regulation (2) to the Building Controller shall bear the name of, and be signed by -

- (a) its author; and
- (b) each other person, if any, involved in the drafting or preparation of the document.

Differentiation between altered and unaltered parts of building

(4) Where alterations are to be made to part only of an existing building, a drawing submitted under this Part in relation to the building shall use different colours to differentiate between the altered and unaltered parts of the building.

8.2 BUILDING APPROVAL FOR STAGES OF BUILDING WORK

Where an application referred to in regulation 8.1(1)(b) for building approval for stages of building work is in relation to a building which will, when constructed -

- (a) have a rise of more than 4 storeys; or
- (b) be more than 1,000 m² in floor area,

the Building Controller may approve the application in stages as -

- (c) Stage 1 - preliminary site works, excavations and protection;
- (d) Stage 2 - footings, retaining walls, lift overruns and like work;
- (e) Stage 3 - completion of the construction of the building, with the exception of the items specified or referred to in Stage 4;
- (f) Stage 4 - where not already included in a building approval given in relation to a Stage 1, 2 or 3 building approval -
 - (i) the fire-fighting services and appliances specified or referred to in Part 27;
 - (ii) the facings and cladding;

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- (iii) details of fire doors, fire windows and fire shutters;
- (iv) the partitions;
- (v) the verandahs;
- (vi) the sunblinds;
- (vii) the signs;
- (viii) the storage of flammable liquids;
- (ix) the wireless, television masts and telecommunication connections;
- (x) the artificial lighting; and
- (xi) the kerbing, fences and stormwater drainage,

of, or in relation to, the building.

8.3 APPROVAL TO DEMOLISH OR REMOVE BUILDING

The Building Controller may require to be lodged with an application referred to in regulation 8.1(1)(c) for building approval to demolish or remove a building -

- (a) an outline and a description of the building to be demolished or removed;
- (b) a site plan in relation to the building which shows the situation of the building in relation to the boundaries of the site and such other features as adjoining buildings or other buildings on the site, streets, footpaths, crossings and the like;
- (c) where part only of the building is to be demolished or removed - computations or other information to show that the remainder of the building will, either as it remains after the demolition or removal takes place or after other works are carried out, comply with the requirements of this Code applicable to it;
- (d) information which shows the position of, and describes, hoardings, barricades, temporary crossings, protective awnings and outriggers; or
- (e) a written description of the demolition procedure.

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8.4 COMMENCEMENT AND COMPLETION OF BUILDING WORK

Building work to be completed within certain period

(1) Subject to sub-regulation (4), a building approval is subject to the condition that the building work the subject of the building approval shall be -

- (a) commenced not later than 12 months; and
- (b) completed not later than 2 years,

after the building approval is given unless another period for the commencement and completion of the building work is specified in the building approval, in which case the building work shall be commenced and completed not later than the other period so specified.

Period of consent for staged building approval

(2) Where an application referred to in regulation 8.1(1)(b) for building approval for stages of building work is given building approval, a period specified or referred to in sub-regulation (1) for the commencement of the building work shall commence from the date the building approval for the first stage of the building work is given.

Lapse of building approval

(3) A building approval given in relation to building work which has not been commenced or completed within the period specified or referred to in sub-regulation (1) applicable to the commencement or completion of the building work shall, upon that occurrence, immediately lapse, and that building work shall not be commenced or completed until it receives a further building approval, if any.

Extension of period for commencement or completion of particular building work

(4) The Building Controller may, in relation to particular building work, as he thinks fit, from time to time extend the period specified or referred to in sub-regulation (1) for the commencement or completion of the building work.

8.5 DISPOSAL OF DRAWINGS AND SPECIFICATIONS LODGED

The drawings and specifications lodged with the Building Controller by an applicant for the purpose of obtaining building approval for building work shall, where the building approval is given, be disposed of so that -

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- (a) one copy of the drawings and specifications, together with all documents lodged with them, is retained by the Building Controller;
- (b) one copy of the drawings and specifications, with evidence of building approval stamped or endorsed on them, is returned to the applicant;
- (c) where the applicant so requests - evidence of approval is stamped or endorsed by the Building Controller on additional copies of the drawings and specifications; and
- (d) the owner of the building, or a person authorized in writing in that behalf by the owner, is entitled to inspect during normal office hours a copy of the drawings, specifications and documents referred to in paragraph (a) retained at the office of the Building Controller and make whatever copies of them he requires.

8.6 SUBMISSION FOR PRELIMINARY EXAMINATION AND REPORT

The owner of a site, or a person authorized in that behalf by the owner, may submit to the Building Controller, without the submission being an application for building approval -

- (a) preliminary drawings, specifications and the certificate of title in relation to the site;
- (b) structural drawings and computations; or
- (c) all the documents referred to in paragraphs (a) and (b),

in relation to a building to be constructed on the site, for examination and report as to whether the building would, if constructed in accordance with the documents so submitted, comply with the requirements of this Code applicable to it.

8.7 LAPSE OF APPLICATION FOR BUILDING APPROVAL

Where further information is required in relation to an application for building approval and that information is not submitted within 3 months after the date of the Building Controller advising the applicant of such requirement, the application shall lapse.

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PART 9 - FEES

9.1 FEES

Maximum fees

(1) Subject to sub-regulation (2), the fees prescribed in this Part are the maximum fees which shall be charged and received by the Building Controller for -

- (a) a building approval; or
- (b) an inspection made or other service provided under the Act,

subject to the condition that the Building Controller may determine that lesser fees shall be charged and received for such building approval, inspection or other service.

Minimum fees

(2) Where the use of a formula prescribed in this Part in relation to determining the fee payable for a building approval, inspection or other service provided under the Act results in a fee which is less than \$10, the fee payable for the building approval, inspection or other service shall, notwithstanding the lesser fee obtained by the use of the formula, be \$10 unless another higher minimum fee is prescribed in this Part in relation to the building approval, inspection or other service.

9.2 FEE TO CONSTRUCT OR ALTER, &c., BUILDING

Fee payable for building approval

(1) Subject to regulation 9.3(3), the fee payable for building approval in relation to -

- (a) a new building; or
- (b) an alteration or addition to an existing building,

is 40 cents per square metre or part of a square metre of the floor area or, where no floor area can be calculated because of the absence of enclosing walls, the area covered by the roof of -

- (c) the new building; or
- (d) the alteration or addition to the existing building,

as the case may be.

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Fee payable includes stage by stage inspection of building work

(2) A fee payable under sub-regulation (1) for building approval is also payable for the stage by stage inspection of building work in relation to -

- (a) the new building; or
- (b) the alteration or addition to an existing building,

the subject of the building approval.

9.3 PRELIMINARY EXAMINATION

Fee payable for examination and report

(1) Subject to sub-regulation (2), the fee payable for an examination and report under regulation 8.6 on the documents submitted under that regulation in relation to a building is -

- (a) where structural computations are not involved - 25%; and
- (b) where structural computations are involved - 50%,

of the fee that would be payable under regulation 9.2 if the building work the subject of those documents were given building approval.

Minimum fee

(2) The minimum fee payable under sub-regulation (1)(b) is \$20.

Reduction of fee payable under regulation 9.2

(3) Where a fee is payable under regulation 9.2 in relation to building work for which a fee has already been paid under sub-regulation (1), the fee otherwise payable under that regulation shall be reduced by that second-mentioned fee, and the fee so reduced shall be the fee payable under that regulation in relation to the building work.

9.4 FEE TO DEMOLISH OR REMOVE BUILDING

The fee payable for building approval to demolish or remove a building is \$20.

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9.5 FEE TO RE-CONSTRUCT BUILDING

The fee payable for building approval to re-construct a removed building is 40 cents per square metre or part of a square metre of the floor area or, where no floor area can be calculated because of the absence of enclosing walls, the area covered by the roof of the building.

9.6 ADDITIONAL COPIES OF SUBMITTED DOCUMENTS

The fee payable for stamping or endorsing each additional set of copies of drawings and specifications referred to in regulation 8.5(c) is -

- (a) in relation to a Class I or X building - \$10 plus 20 cents per sheet of specifications; and
- (b) in relation to a building other than a Class I or X building - \$10 plus \$1.20 per sheet of drawings and 20 cents per sheet of specifications.

9.7 APPEAL TO BOARD

The fee payable for an appeal to the Board is \$50.

9.8 OTHER FEES

The fee payable for a service, approval, inspection or report under the Act or this Code not otherwise provided for in this Part is \$20.

9.9 REFUND OF FEES

Prescribed circumstances for refund of fees

(1) For the purposes of section 48(4) of the Act, the prescribed circumstances for or in relation to the refund of fees paid under the Act is where an application for building approval to construct a building is withdrawn, whether before or after the building approval is given in relation to the building work, by the owner of the building or a person authorized in that behalf by the owner.

Refund of fees

(2) Where an application for building approval to construct a building is withdrawn in accordance with sub-regulation (1), fees paid under the Act for or in relation to the application shall be refunded in accordance with Table 9.9(2).

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TABLE 9.9(2)

Stage at which application for building approval is withdrawn	Percentage of fees paid to be refunded %
Where application has been accepted only	75
Where application has been accepted and examined for compliance with the Act and this Code	50
Where application has been accepted, examined for compliance with the Act and this Code and building approval has been given	25

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PART 10 - MATERIALS AND WORKMANSHIP

10.1 BUILDINGS TO BE CONSTRUCTED IN GOOD AND WORKMANLIKE MANNER

A building shall be constructed in a good and workmanlike manner.

10.2 SUITABILITY OF MATERIALS

Certain materials not to be used in construction of building

(1) A material shall not be used in the construction of a building where the material -

- (a) is faulty;
- (b) is unsuitable for the purpose for which it is intended;
- (c) is dangerous to health;
- (d) has been used in the construction of a cesspit, drain or sewer; or
- (e) otherwise does not comply with the requirements of this Code applicable to it.

Building Controller may test, &c., materials

(2) The Building Controller may require a material to be used in building work to be tested to determine whether it complies with the requirements of this Code applicable to it.

10.3 AUTHENTICATION OF MATERIALS AND FORMS OF CONSTRUCTION

Building Controller may require evidence of compliance of material

(1) Subject to sub-regulation (3), where a material or form of construction that is to be used in building work is required to -

- (a) meet a specific performance requirement;
- (b) meet a required fire-resistance rating; or
- (c) otherwise comply with a requirement of this Code applicable to it,

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the Building Controller may require the application for building approval in relation to the building work to be accompanied by documentary evidence, satisfactory to him, in support of the use of the material or form of construction.

Form of documentary evidence required

(2) The documentary evidence referred to in sub-regulation (1) in relation to a material or form of construction referred to in that sub-regulation shall be -

(a) a report issued by -

- (i) a laboratory registered in the appropriate field with the National Association of Testing Authorities, Australia;
- (ii) the Division of Building Research, C.S.I.R.O.; or
- (iii) an approved person,

which shows that the material or form of construction has been submitted to the tests specified in the report and which sets out the results of those tests and other information that demonstrates its suitability for use in the building in which it is to be used;

(b) an accreditation certificate, being a certificate that -

- (i) has been issued by the Chief, Experimental Building Station, North Ryde, New South Wales;
- (ii) relates the properties and performance of the material or form of construction that is referred to in the certificate to the requirements of this Code applicable to the material or form of construction; and
- (iii) has not been revoked or cancelled by the Chief referred to in sub-paragraph (i); or

(c) documentary evidence that, in the opinion of the Building Controller, correctly describes the properties and performance of the material or form of construction and adequately demonstrates its suitability for use in the building in which it is to be used.

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Evidence in relation to fire-resistance rating

(3) The documentary evidence referred to in sub-regulation (1) in relation to a fire-resistance rating referred to in that regulation shall be a report of a test issued by -

- (a) the Chief, Experimental Building Station, North Ryde;
- (b) the Fire Research Station, Building Research Establishment, Department of the Environment, Great Britain;
- (c) the Fire Insurers' Research and Testing Organisation, Great Britain;
- (d) the National Bureau of Standards, United States of America;
- (e) the Underwriters' Laboratories Incorporated, United States of America;
- (f) the National Research Council, Canada;
- (g) the Underwriters' Laboratories of Canada;
- (h) the Building Research Association of New Zealand; or
- (j) a laboratory approved to carry out such a test by -
 - (i) the National Association of Testing Authorities, Australia;
 - (ii) the Department of the Environment of Great Britain; or
 - (iii) the Testing Laboratory Registration Council of New Zealand,

and shall describe the conditions of the test, and the prototype of the material or form of construction subjected to the test, to which the documentary evidence relates.

10.4 ADOPTION OF AUSTRALIAN AND OTHER STANDARDS

Where a regulation adopts by reference an Australian Standard, a code, standard rule, specification or provision, the adoption, unless the regulation otherwise specifies, shall not include the adoption of a provision which -

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- (a) specifies or defines the respective rights, responsibilities or obligations, as amongst themselves, of a manufacturer, supplier or purchaser;
- (b) specifies or defines the responsibilities of a tradesman or other building operative;
- (c) requires the submission for approval of a material, building component, form or method of construction, or details of a form or method of construction, to a person or body other than a person or body specifically empowered by this Code to give that approval;
- (d) specifies that a material, building component, form or method of construction, or details of a form or method of construction, shall be submitted to the Standards Association of Australia or a committee of that association for expression of opinion; or
- (e) permits a departure from the Australian Standard, code, standard rule, specification or provision at the sole discretion of the manufacturer or purchaser, or by arrangement or agreement between the manufacturer and purchaser.

10.5 REPORTS TO BE UNABRIDGED

Where, in this Code, evidence, by way of a report, is submitted to the Building Controller, the report so submitted shall be the original report or a complete and unabridged copy of the original report.

10.6 BUILDING MATERIALS WHICH CONTAIN ASBESTOS

Asbestos fibre, &c., to be treated

(1) Subject to sub-regulation (2), asbestos fibre or materials which contain asbestos, including amosite (brown asbestos) and chrysotile (white asbestos), shall not be used in a building unless the material is treated to the satisfaction of the Building Controller to prevent undue exposure of the occupants of the building to airborne asbestos fibres.

Certain asbestos not to be used

(2) Notwithstanding sub-regulation (1) -

- (a) a material which contains crocidolite (blue asbestos);

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- (b) a loose-fill asbestos insulation material;
- (c) an application method which involves the spraying of a material which contains asbestos;
- (d) an asbestos based product in a ventilating system;
- (e) an unsealed asbestos based tile not permanently fixed to a wall or ceiling;
- (f) unless approved, an asbestos pad, quilt, rope, including bagged asbestos for fire-proofing pipe or conduit holes;
- (g) a paint which contains asbestos; or
- (h) a foamed asbestos,

shall not be used in building work.

10.7 UREA-FORMALDEHYDE FOAM INSULATION

Urea-formaldehyde foam insulation shall not be used in a building unless its installation is controlled, or it is treated, so as to ensure that the concentration of formaldehyde in the air inside the building -

- (a) measured not less than 3 days after installation; and
- (b) immediately after a period of not less than 72 hours during which all doors, windows and other external openings in the building have remained closed,

is not more than 0.1 ppm.

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PART 11 - SITE REQUIREMENTS

11.1 APPLICATION

Siting requirements

(1) Subject to sub-regulation (2), this Part applies to and in relation to the siting of a building.

Planning instrument over building area

(2) The requirements of this Part do not apply to or in relation to any part of a building area which is subject to a planning instrument which has provisions for the siting of buildings in that part, to the extent to which those requirements are inconsistent with those provisions, regardless of whether those provisions are -

- (a) specified in the planning instrument; or
- (b) contained within the powers of the consent authority, within the meaning of the *Planning Act*, specified in the planning instrument as the consent authority for that planning instrument.

11.2 INTERPRETATION

Definition of "siting"

(1) In this Part, unless the contrary intention appears, "siting" includes plot ratio, site coverage and set-back.

Area of site with truncated corner

(2) Where the corner of a site has been truncated, the area of the site shall, for the purposes of this Part, include the area of the truncated part.

11.3 CLASS I AND X BUILDINGS

Minimum distances

(1) Subject to this regulation, a Class I or X building shall be situated not less than -

- (a) 7.5 m from the street alignment of a primary street;
- (b) in the case of such a building constructed on the intersection of 2 streets - 2.5 m from the street alignment of the secondary street; and

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- (c) 1.5 m from boundaries other than the street alignments referred to in paragraphs (a) and (b),

and the eaves of such a building shall be not less than 800 mm from a boundary referred to in paragraph (c).

Exceptions for certain Class X buildings, carports and private garages

(2) Subject to sub-regulation (4), a Class X building, carport or private garage may be constructed less than 1.5 m from a side or rear boundary of its site where that part of the Class X building, carport or private garage less than 1.5 m from the side or rear boundary has external walls -

- (a) constructed of masonry or other approved material; and
- (b) with a fire-resistance rating of not less than one hour.

Other exceptions

(3) A verandah, carport, pergola or other like approved structure, constructed without external walls, may be constructed less than 7.5 metres from the street alignment of a primary street where no part of the verandah, carport, pergola or other like approved structure is less than 4.5 metres from that street alignment unless approved.

Garden sheds

(4) The requirements of sub-regulation (2) do not apply to or in relation to a garden shed, to be constructed less than 1.5 m from a side or rear boundary of its site, which -

- (a) is not more than 6 m² in area;
- (b) is not more than 2.3 m in height;
- (c) has no openings in its walls which adjoin a boundary; and
- (d) is constructed of non-combustible material.

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11.4 GENERAL SITE RESTRICTIONS

Only Class I and X buildings on one site

(1) Subject to sub-regulation (2), a building other than a Class X building shall not be constructed on a site or which there is, or is to be, constructed a Class I building.

Two Class I buildings on one site

(2) A person may construct 2 Class I buildings on a site where -

- (a) the site is not less than 4 ha in area;
- (b) both buildings are constructed in a situation which complies with the requirements of this Code in relation to site requirements in relation to separate sites; and
- (c) the Building Controller is of the opinion that, having regard to the public interest, the construction of the 2 buildings on the site should be permitted.

Plot ratio of Class 1 buildings

(3) Subject to sub-regulation (2), the aggregate floor area of a Class 1 building and a Class X building, if any, situated on a site shall have a plot ratio of not more than 0.5.

Exceptions to plot ratio requirement

(4) Sub-regulation (3) does not apply to or in relation to a verandah, carport, pergola or other like structure which is constructed without external walls.

11.5 BUILDING EASEMENTS

Building approval shall not be given to building work in relation to the construction of a building on or over an easement unless the application for the building approval is accompanied by documentation which shows that the person who may lawfully consent to an encroachment on or over that easement has given that consent.

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PART 12 - PRECAUTIONS DURING CONSTRUCTION

No provisions.

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PART 13 - DEMOLITIONS

No provisions.

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PART 14 - HEIGHT IN RELATION TO WIDTHS OF STREETS

No provisions.

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PART 15 - PROJECTIONS BEYOND STREET ALIGNMENTS

No provisions.

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PART 16 - FIRE-RESISTING CONSTRUCTION OF BUILDINGS

16.1 CERTAIN BUILDINGS TO BE OF CERTAIN TYPES OF CONSTRUCTION

Types of construction

(1) A Class II, III, IV, V, VI, VII, VIII or IX building shall be constructed as -

- (a) a Type 1 construction, in accordance with regulation 16.5;
- (b) a Type 2 construction, in accordance with regulation 16.6;
- (c) a Type 3 construction, in accordance with regulation 16.7;
- (d) a Type 4 construction, in accordance with regulation 16.8; or
- (e) a Type 5 construction, in accordance with regulation 16.9.

Building of fire-resisting construction

(2) For the purposes of this Code, a building that complies with the requirements of this Part applicable to a Type 1, 2, 3, 4 or 5 construction is a building of fire-resisting construction with, in descending order, a Type 1 construction being the most fire-resisting and a Type 5 construction the least fire-resisting.

16.2 MINIMUM FIRE-RESISTING CONSTRUCTION OF BUILDING

The type of fire-resisting construction of a building shall be not less than the least fire-resisting type of construction required under -

- (a) where the building is not in a fire zone - Part 17; and
- (b) where the building is in a fire zone - Part 18, in relation to the building.

16.3 SUPPORTING PART OF BUILDING TO BE FIRE-RESISTING

A part of a building that gives direct or indirect vertical support to another part of the building required to have a fire-resistance rating shall -

- (a) have a fire-resistance rating not less than -
 - (i) the fire-resistance rating required for the part it so supports; or

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- (ii) the fire-resistance rating, if any, required for the part itself,

whichever is the greater; and

- (b) where the part it so supports is required to be non-combustible - be non-combustible.

16.4 EXPOSURE TO FIRE-SOURCE FEATURES

Definition of "fire-source feature"

(1) For the purposes of this Code, "fire-source feature", in relation to a building on a site, means -

- (a) the farther boundary of a street, if any, which adjoins the site;
- (b) a side boundary of the site, together with a 1.5 m straight projection of that boundary onto the street;
- (c) a rear boundary of the site; or
- (d) an external wall of another building, other than a Class I or X building, that stands on the site,

as illustrated in Figure 16.4(1).

Where exposure to fire-source feature occurs

(2) Subject to sub-regulation (3), for the purposes of this Code, a part of a structural member of a building is exposed to a fire-source feature where a horizontal straight line between the part and the fire-source feature, or a vertical projection of the fire-source feature, is not obstructed by another part of the building that -

- (a) has a fire-resistance rating of not less than 30 minutes; and
- (b) is not transparent or translucent,

as illustrated in Figure 16.4(2).

Where fire-source feature not to be taken into account

(3) For the purposes of this Code, a part of a structural member of a building is not exposed to a fire-source feature where the fire-source feature is -

- (a) an external wall of another building that stands on the site of the first-mentioned building and the part is not less than 15 m in height above the highest part of that external wall; or

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- (b) a side or rear boundary of the site and the part is below the level of the finished ground at the side or rear boundary.

Definition of "effective distance"

(4) For the purposes of this Code, "effective distance", in relation to the distance between a part of a structural member and a fire-source feature to which it is exposed, means -

- (a) the horizontal distance from the part to the fire-source feature, or a vertical projection of the fire-source feature, measured at right angles to the vertical face of the part; or
- (b) 3 times the horizontal distance from the fire-source feature to the part, measured at right angles to the fire-source feature or a vertical projection of the fire-source feature,

as illustrated in Figure 16.4(4), whichever is the lesser or, where, because of the particular geometrical configurations concerned -

- (c) the horizontal distance specified in paragraph (a) cannot be found - the horizontal distance specified in paragraph (b); or
- (d) the horizontal distance specified in paragraph (b) cannot be found - the horizontal distance specified in paragraph (a),

as the case may be.

Where more than one effective distances applies

(5) Subject to sub-regulation (4), where, under this regulation, more than one effective distance applies to different parts of a structural member, the member shall be constructed so that -

- (a) the entire member has the fire-resistance rating applicable to the part which has the least effective distance between it and a fire-source feature; or
- (b) each part has the fire-resistance rating applicable to its individual effective distance from the fire-source feature to which it is exposed.

FIGURE 16.4(1)

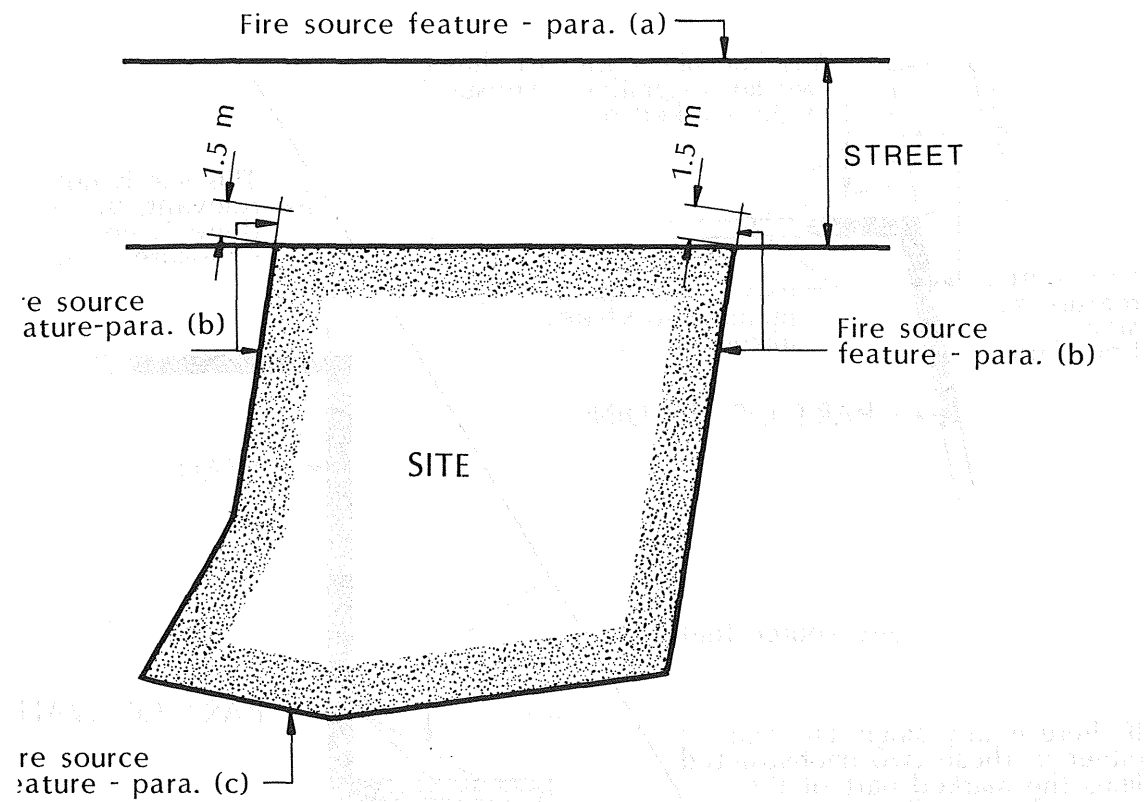


FIGURE 16.4(2)

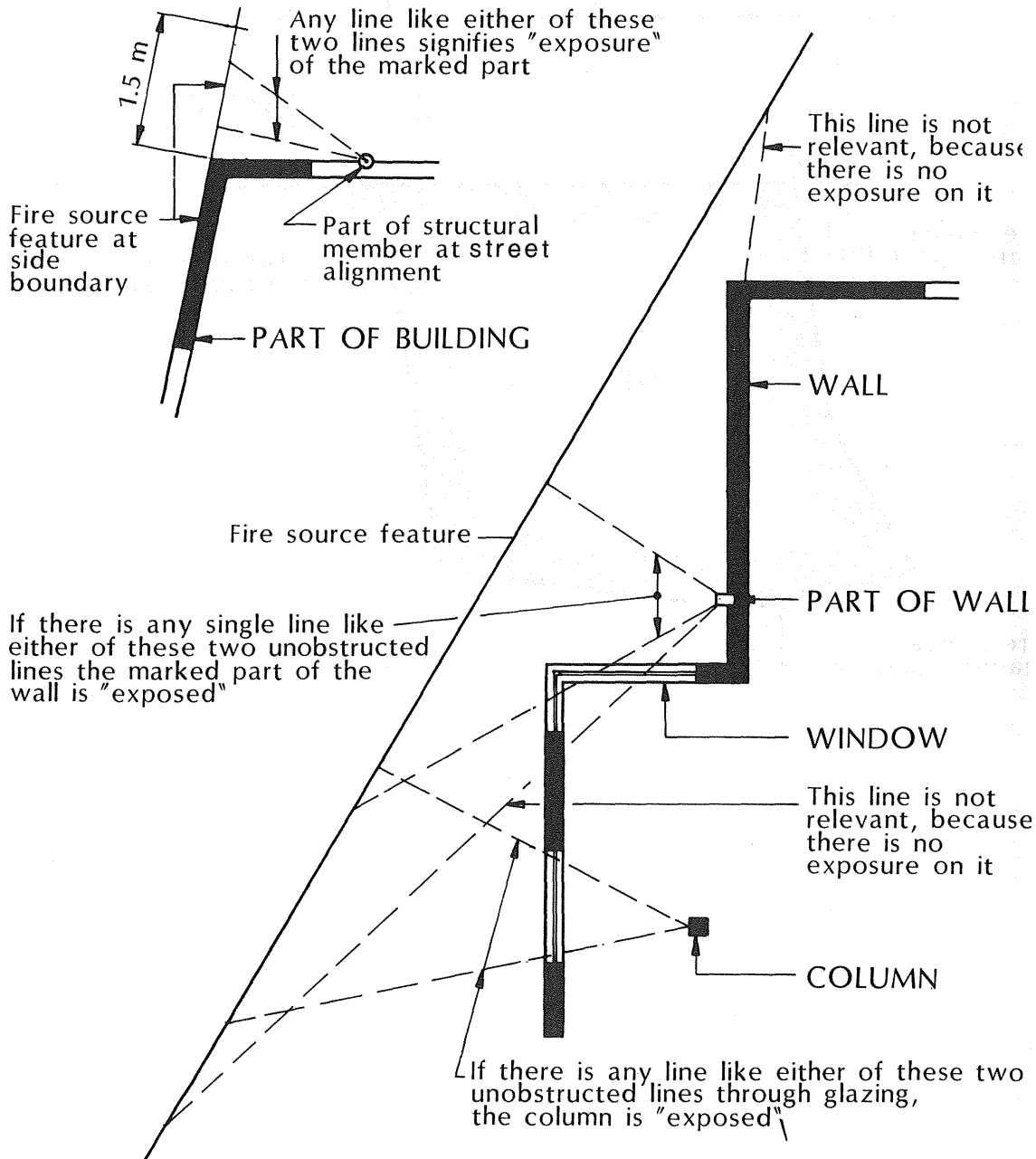
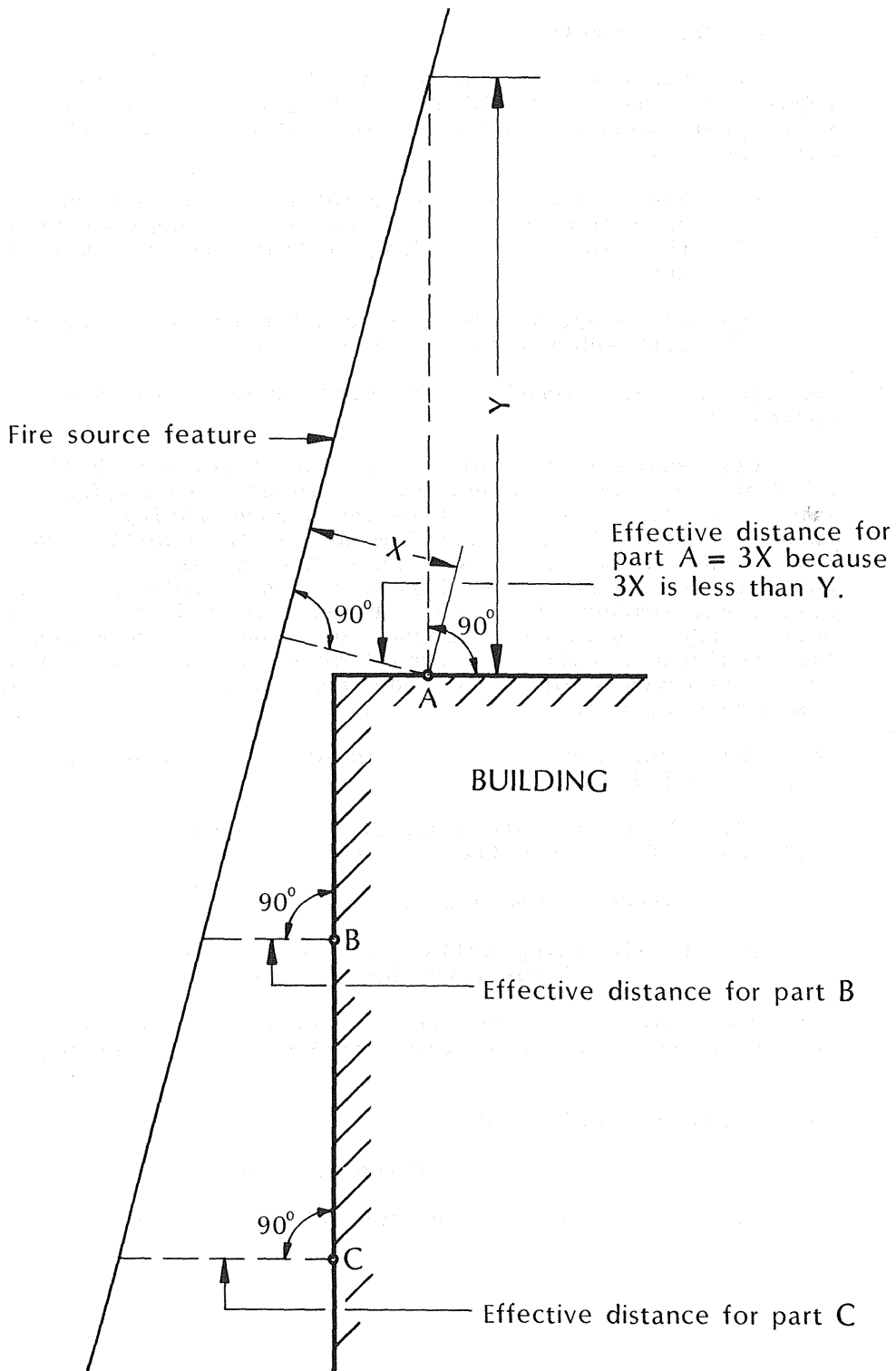


FIGURE 16.4(4)



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16.5 TYPE 1 CONSTRUCTION

General requirements

(1) Subject to regulations 16.20, 23.2 and this regulation, where a building is of Type 1 construction, a structural member specified in Table 16.5(1) of the building shall -

- (a) have a fire-resistance rating not less than that specified for it in the table, applicable to the class of building of which it is a member; and
- (b) where applicable - be constructed in accordance with sub-regulation (11) or (12).

Concession for certain structural members of Class II buildings

(2) Where a structural member of a Class II building of Type 1 construction not in a fire zone is required by Table 16.5(1) to have a fire-resistance rating of more than $1\frac{1}{2}$ hours, the structural member may, notwithstanding that requirement, have a lesser fire-resistance rating but, in any case, the fire-resistance rating of the structural member shall be not less than $1\frac{1}{2}$ hours and, where such a structural member does have such a lesser fire-resistance rating, it shall be deemed to comply with the requirements of this Code applicable to its fire-resistance rating.

Concession for floors of certain sole-occupancy units in Class II buildings

(3) Where a sole-occupancy unit in a Class II building of Type 1 construction -

- (a) extends through 2 storeys; and
- (b) has bounding walls which have a fire-resistance rating of not less than $1\frac{1}{2}$ hours,

the floor which separates the 2 storeys within the sole-occupancy unit is not required to have a fire-resistance rating.

Concession for certain other floors

(4) Where a building of Type 1 construction -

- (a) has a floor laid directly on the ground; or

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- (b) is a Class II, III, V or IX building and has a floor, not laid directly on the ground, but the part of the building below which floor is not a storey and is not designed, constructed or adapted for -

- (i) the accommodation of motor vehicles;
- (ii) the accommodation of baths, showers, laundries or closet fixtures;
- (iii) use as a work area; or
- (iv) storage or any other ancillary purpose,

the floor is not required to have a fire-resistance rating.

Concession for certain floors of Class V and IXb buildings

(5) Where a floor of a Class V or IXb building of Type 1 construction is designed for a live load of not more than 3.0 kPa, the fire-resistance rating of the floor, including the floor beams, or roof, including the roof beams, immediately above that first-mentioned floor shall, notwithstanding Table 16.5(1), be 1½ hours.

Concession for non-loadbearing internal walls of Class VII buildings which have rise of not more than 6 storeys

(6) The non-loadbearing internal walls, including partition walls, bounding the public corridors, public hallways and the like of a Class VII building of Type 1 construction which has a rise of not more than 6 storeys may contain combustible framing where the combustible framing -

- (a) has not been jointed by means of glue unless it has been laminated, or finger jointed, and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue; and
- (b) has a mass per unit length in the aggregate of not more than 45 kg/m of partition wall measured horizontally.

Concessions for open-deck parking stations

(7) The fire-resistance rating of the parts specified in the following paragraphs of an open-deck parking station of Type 1 construction shall, notwithstanding Table 16.5(1), be not less than -

- (a) for a column situated at an effective distance of less than 4.5 m from a fire-source feature to which it is exposed - 3 hours;

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- (b) for a column other than a column referred to in paragraph (a) - 2 hours;
- (c) for a loadbearing internal wall or fire wall - 2 hours;
- (d) for a floor beam where not less than half its cross-section is less than 3 m from an edge of a floor - 2 hours;
- (e) for a floor beam other than a floor beam referred to in paragraph (d) - 1 hour; and
- (f) for a floor - 1 hour.

Concession for roofs of Class II, III and IX buildings which have rise of not more than 6 storeys

(8) Sub-regulation (1) does not apply to or in relation to the roof of a Class II, III or IX building of Type 1 construction which has a rise of not more than 6 storeys, where -

- (a) the covering of the roof is non-combustible; and
- (b) the ceiling immediately below the roof has a resistance to the incipient spread of fire to the roof space of not less than one hour, as determined in the standard fire test.

Concessions for roofs of Class V, VI, VII and VIII buildings which have rise of not more than 6 storeys

(9) Sub-regulation (1) does not apply to or in relation to the roof of a Class V, VI, VII or VIII building of Type 1 construction which has a rise of not more than 6 storeys but, where such a building has a rise of 4, 5 or 6 storeys -

- (a) the roof covering of the roof of the building shall be non-combustible; and
- (b) the ceiling immediately below the roof shall have a resistance to the incipient spread of fire to the roof space of not less than one hour, as determined in the standard fire test.

Internal columns exposed through window to fire-source feature

(10) The requirements of Table 16.5(1) which specify fire-resistance ratings in accordance with effective distance shall apply to and in relation to a part of an internal column, in a building of Type 1 construction, that -

- (a) faces and is less than 1.5 m from a window; and

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- (b) is exposed through the window to a fire-source feature.

Construction of certain internal walls

(11) An internal wall, including a partition wall, of a building of Type 1 construction, required by Table 16.5(1) to have a fire-resistance rating, shall -

- (a) extend to -
 - (i) the underside of the floor, if any, immediately above the internal wall;
 - (ii) the underside of a roof, which complies with sub-regulation (1), of the building;
 - (iii) the roof covering of a roof, other than a roof referred to in sub-paragraph (ii), of the building; or
 - (iv) a ceiling, immediately below the roof, of the building and which has a resistance to the incipient spread of fire to the roof space of not less than one hour, as determined in the standard fire test; and
- (b) be so fixed to the floor, roof or ceiling, referred to in paragraph (a), to which it extends, as to be held by it against overturning in the event of a fire.

Construction of certain parts of Type 1 constructions

(12) Where a building is of Type 1 construction, its -

- (a) loadbearing internal walls and fire walls, including such walls that are parts of load-bearing shafts, shall be of concrete or masonry; and
- (b) non-loadbearing -
 - (i) lift shafts and stair shafts required to be fire-resisting; and
 - (ii) ventilating, pipe, garbage and like shafts that are not intended for the discharge of the hot products of combustion,

shall be of concrete, masonry or plaster on metal lath, or other material not less hard and dense than plaster on metal lath.

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Concessions for certain internal columns and walls

(13) Where, in pursuance of sub-regulation (8) or (9), a roof that does not have a fire-resistance rating is used in a building of Type 1 construction which has a rise of not more than 6 storeys, the internal columns, excluding those referred to in sub-regulation (10), and loadbearing internal walls, excluding fire walls, in the storey immediately below the roof may, notwithstanding the fire-resistance ratings specified in Table 16.5(1) otherwise applicable to them, have fire-resistance ratings of, in the case of -

- (a) Class II and Class III buildings - not less than one hour;
- (b) Class V, VI, VII, VIII and IX buildings, where the building has a rise of more than 3 storeys - not less than one hour, but otherwise no fire-resistance rating,

and, where such an internal column or loadbearing internal wall has, in accordance with this sub-regulation, a fire-resistance rating specified in paragraph (a) or (b), it shall be deemed to comply with the requirements of Table 16.5(1) which would, but for this sub-regulation, be applicable to it.

TABLE 16.5(1)

TYPE 1 CONSTRUCTION: FIRE-RESISTANCE RATINGS OF STRUCTURAL MEMBERS									
Structural members	Ratings (in hours)								
	Class of building								
	II	III	V	VI	VII	VIIIa	VIIIb	IX	
External loadbearing structural members where the effective distance between such a structural member and a fire-source feature to which it is exposed is -									
less than 4.5 m	3	3	3	3	4	3	4	3	
4.5 m to less than 6 m	2	2	2	3	4	3	4	2	
6 m or more	1½	1½	2	3	4	3	4	2	

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TABLE 16.5(1) - continued

TYPE 1 CONSTRUCTION: FIRE-RESISTANCE
RATINGS OF STRUCTURAL MEMBERS

Structural members	Ratings (in hours)							
	Class of building							
	II	III	V	VI	VII	VIIIa	VIIIb	IX
External non-loadbearing								
structural members where the effective distance between such a structural member and a fire-source feature to which it is exposed is -								
less than 4.5 m	3	3	3	3	4	3	4	3
4.5 m to less than 6 m	2	2	2	3	4	3	4	2
6 m to less than 7.5 m	1½	1½	2	3	4	3	4	2
7.5 m to less than 9 m	1	1	1½	2	3	2	3	1½
9 m or more	1	1	1	1½	2	1½	2	1
Internal loadbearing walls and fire walls, including those bounding public corridors, public hallways and the like, or between or bounding sole-occupancy units, and those of loadbearing shafts								
	1½	1½	2	3	4	3	4	2
Lift shafts and stair shafts required to be fire-resisting that are not loadbearing								
	1½	1½	2	2	2	2	2	2
Ventilating, pipe, garbage and like shafts neither intended for discharge of the hot products of combustion nor loadbearing								
	1½	1½	1½	2	2	2	2	1½
Internal non-loadbearing walls, including partition walls -								
bounding public corridors, public hallways and the like	1	1	-	-	1	1	1	-
between or bounding sole-occupancy units	1½	1	-	-	-	-	-	-

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TABLE 16.5(1) - continued

TYPE 1 CONSTRUCTION: FIRE-RESISTANCE RATINGS OF STRUCTURAL MEMBERS									
Structural members	Ratings (in hours)								
	Class of building								
	II	III	V	VI	VII	VIIIa	VIIIb	IX	
bounding a stairway that is not required to be enclosed by a fire-resisting shaft .	1	1	-	-	-	-	-	-	-
Floors, including floor beams, roofs, including roof beams and trusses and internal columns	1½	1½	2	3	4	3	4	2	

Note: For a Class IV building, the fire-resistance rating shall be as required by, in the case of a Class IV building not in a fire zone, regulation 17.7 and, in the case of a Class IV building in a fire zone, regulation 18.6.

16.6 TYPE 2 CONSTRUCTION

General requirements

(1) Subject to regulation 23.2 and this regulation, where a building is of Type 2 construction, a structural member specified in Table 16.6(1) of the building shall -

- (a) have a fire-resistance rating not less than that specified for it in the table, applicable to the class of building of which it is a member; and
- (b) where applicable - be constructed in accordance with sub-regulation (10) or (11).

Certain floor and roof construction deemed to comply

(2) Where a building is of Type 2 construction, a floor or roof of the building shall, for the purposes of this Code, be deemed to have a fire-resistance rating of not less than one hour where -

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- (a) the ceiling, if any, immediately below the floor or roof has a resistance to the incipient spread of fire to the space immediately above it of not less than one hour, as determined in the standard fire test; and
- (b) in the case of the roof - the covering of the roof is non-combustible.

Concession for certain floors

(3) Where a building of Type 2 construction has a floor -

- (a) laid directly on the ground; or
- (b) not laid directly on the ground, but the part of the building below the floor is not a storey and is not designed, constructed or adapted for -
 - (i) the accommodation of motor vehicles;
 - (ii) the accommodation of baths, showers, laundries or closet fixtures;
 - (iii) use as a work area; or
 - (iv) storage or any other ancillary purpose,

the floor is not required to have a fire-resistance rating.

Concession for certain structural members of Class II buildings not in fire zone

(4) Where a structural member of a Class II building of Type 2 construction not in a fire zone is required by Table 16.6(1) to have a fire-resistance rating greater than $1\frac{1}{2}$ hours, the structural member may, notwithstanding that requirement, have a lesser fire-resistance rating but, in any case, the fire-resistance rating of the structural member shall be not less than $1\frac{1}{2}$ hours and, where such a structural member does have such a lesser fire-resistance rating, it shall be deemed to comply with the requirements of this Code applicable to its fire-resistance rating.

Concession for certain floors of Class II buildings

(5) Where a sole-occupancy unit in a Class II building of Type 2 construction -

- (a) extends through 2 storeys; and

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- (b) has bounding walls which have a fire-resistance rating of not less than $1\frac{1}{2}$ hours,

the floor which separates the 2 storeys within the sole-occupancy unit is not required to have a fire-resistance rating.

Concession for certain loadbearing walls

(6) Where the roof of a building of Type 2 construction and the ceiling immediately below that roof comply with sub-regulation (2)(a) and (b), a fire-resistance rating of not less than one hour shall, notwithstanding Table 16.6(1), apply for a loadbearing internal wall, excluding a fire wall, in the storey immediately below that roof.

Concessions for open-deck parking stations

(7) The fire-resistance rating of the parts specified in the following paragraphs of an open-deck parking station of Type 2 construction shall, notwithstanding Table 16.6(1), be not less than -

- (a) for a column situated at an effective distance of -
 - (i) less than 4.5 m from a fire-source feature to which it is exposed - 2 hours;
 - (ii) 4.5 m to less than 9 m from a fire-source feature to which it is exposed - $1\frac{1}{2}$ hours;
 - (iii) 9 m or more from a fire-source feature to which it is exposed - 1 hour; and
- (b) for a loadbearing internal wall or fire wall - 2 hours.

Concession for roof of, and certain columns in, certain low-rise buildings

(8) Sub-regulation (1) does not apply to or in relation to the roof and internal supporting columns, other than such a column referred to in sub-regulation (9), of a building of Type 2 construction which has a rise of not more than 2 storeys.

Internal columns exposed through window to fire-source feature

(9) A part of an internal column, in a building of Type 2 construction, that -

- (a) faces and is less than 1.5 m from a window; and

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- (b) is exposed through the window to a fire-source feature,

shall, where the effective distance between the part and the fire-source feature is less than 6 m, have a fire-resistance rating of not less than 1½ hours.

Construction of certain partition walls

(10) A partition wall in a building of Type 2 construction required by Table 16.6(1) to have a fire-resistance rating shall -

- (a) extend to -

- (i) the underside of the floor, if any, immediately above the partition wall;
- (ii) the underside of a roof, which complies with sub-regulation (1), of the building; or
- (iii) a ceiling which complies with sub-regulation (2)(a); and

- (b) be -

- (i) so fixed to the floor, roof or ceiling referred to in paragraph (a), to which it extends, as to be held by it against over-turning in the event of a fire; or
- (ii) of concrete or masonry carried on a wall of concrete or masonry below the partition wall.

Construction of certain parts of Type 2 constructions

(11) Where a building is of Type 2 construction, its -

- (a) loadbearing internal walls and fire walls, including such walls that are parts of load-bearing shafts, shall be of concrete or masonry; and

- (b) non-loadbearing -

- (i) lift shafts and stair shafts required to be fire-resisting; and
- (ii) ventilating, pipe, garbage and like shafts that are not intended for the discharge of the hot products of combustion,

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shall be of concrete, masonry or plaster on metal lath, or other material not less hard and dense than plaster on metal lath,

and -

- (c) where the building is a Class II or III building - the internal walls bounding a sole-occupancy unit or separating adjoining sole-occupancy units shall be of concrete or masonry.

TABLE 16.6(1)

TYPE 2 CONSTRUCTION: FIRE-RESISTANCE RATINGS OF STRUCTURAL MEMBERS									
Structural members	Ratings (in hours)								
	Class of building								
	II	III	V	VI	VII	VIIIa	VIIIb	IX	
External load-bearing structural members where the effective distance between such a structural member and a fire-source feature to which it is exposed is -									
less than 4.5 m	3	3	3	3	4	3	4	3	
4.5 m to less than 6 m	2	2	2	3	4	3	4	2	
6 m or more	1½	1½	2	3	4	3	4	2	
External non-loadbearing structural members where the effective distance between such a structural member and a fire-source feature to which it is exposed is -									
less than 4.5 m	3	3	3	3	4	3	4	3	
4.5 m to less than 6 m	2	2	2	3	4	3	4	2	
6 m to less than 7.5 m	1½	1½	2	3	4	3	4	2	
7.5 m to less than 9 m	1	1	1½	2	3	2	3	1½	
9 m or more	1	1	1	1½	2	1½	2	1	

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TABLE 16.6(1) - continued

TYPE 2 CONSTRUCTION: FIRE-RESISTANCE RATINGS OF STRUCTURAL MEMBERS								
Structural members	Ratings (in hours)							
	Class of building							
	II	III	V	VI	VII	VIIIa	VIIIb	IX
Internal loadbearing walls and fire walls, including those bounding public corridors, public hallways and the like, or between or bounding sole-occupancy units, and those of loadbearing shafts	1½	1½	2	3	4	3	4	2
Lift shafts and stair shafts required to be fire-resisting that are not loadbearing	1½	1½	2	2	2	2	2	2
Ventilating, pipe, garbage, and the like shafts neither intended for discharge of the hot products of combustion nor loadbearing	1½	1½	1½	2	2	2	2	1½
Internal non-loadbearing walls, including partition walls -								
bounding public corridors, public hallways and the like	1	1	-	-	1	1	1	-
between or bounding sole-occupancy units	1½	1	-	-	-	-	-	-
bounding a stairway that is not required to be enclosed by a fire-resisting shaft	1	1	-	-	-	-	-	-
Floors, including floor beams, roofs, including roof beams and trusses, and internal columns	1	1	1	1	1	1	1	1

Note: For a Class IV building, the fire-resistance rating shall be as required by, in the case of a Class IV building not within a fire zone, regulation 17.7 and, in the case of a Class IV building within a fire zone, regulation 18.6.

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16.7 TYPE 3 CONSTRUCTION

General requirements

(1) Subject to this regulation, where a building is of Type 3 construction, a structural member specified in Table 16.7(1) of the building shall -

- (a) have a fire-resistance rating not less than that specified for it in the table, applicable to the class of building of which it is a member; and
- (b) where applicable - be constructed in accordance with sub-regulation (6) or (9).

Concession for certain structural members of Class II buildings

(2) Where a structural member of a Class II building of Type 3 construction not in a fire zone is required by Table 16.7(1) to have a fire-resistance rating of more than 1½ hours, the structural member may, notwithstanding that requirement, have a lesser fire-resistance rating but, in any case, the fire-resistance rating of the structural member shall be not less than 1½ hours and, where such a structural member does have such a lesser fire-resistance rating, it shall be deemed to comply with the requirements of this Code applicable to its fire-resistance rating.

Concession for certain loadbearing internal walls

(3) Sub-regulation (1) does not apply to or in relation to a loadbearing internal wall, other than a fire wall, in a storey immediately below the roof of a building, except that, where the loadbearing internal wall is in a Class II or III building of Type 3 construction, it shall -

- (a) have a fire-resistance rating of not less than 1 hour where the wall bounds -
 - (i) a public corridor, public hallway or the like;
 - (ii) a sole-occupancy unit; or
 - (iii) a stairway that is not required to be enclosed by a fire-resisting shaft; and

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(b) where it is a wall referred to in paragraph (a), extend -

(i) to the underside of a ceiling which has a resistance to the incipient spread of fire to the roof space of not less than one hour, as determined in the standard fire test;

(ii) to the underside of the covering of the roof of the building where the covering is non-combustible; or

(iii) where the covering of the roof of the building is combustible - 450 mm in height above the covering,

and, where the wall is subject to sub-paragraph (a)(ii), (iii), (b)(ii) or (iii), shall not be crossed by timber purlins or other combustible material.

Concession for open-deck parking stations

(4) The fire-resistance rating of the parts specified in the following paragraphs of an open-deck parking station of Type 3 construction shall, notwithstanding Table 16.7(1), be not less than -

(a) for a column situated at an effective distance of -

(i) less than 6 m from a fire-source feature to which it is exposed - 1 hour; and

(ii) 6 m or more from a fire-source feature to which it is exposed - nil; and

(b) for a loadbearing internal wall or fire wall - 2 hours.

Certain junctions of floor members and stair shafts to be constructed in specific way

(5) Where a stair shaft in a building of Type 3 construction supports a floor of a structural member of the building, the junction of -

(a) the stair shaft; and

(b) the floor or member,

shall, unless the floor or part has a fire-resistance rating of not less than one hour, be so constructed that the floor or member, where it sags or falls in the event of a fire, will be able to do so without causing structural damage to the shaft.

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Extent of certain partition walls

(6) A partition wall in a Class II or III building of Type 3 construction required by Table 16.7(1) to have a fire-resistance rating shall extend -

- (a) to the underside of the floor, if any, immediately above the partition wall;
- (b) to the underside of a ceiling which has a resistance to the incipient spread of fire to the space above itself of not less than one hour, as determined in the standard fire test;
- (c) to the underside of the covering of the roof of the building, where the covering is non-combustible; or
- (d) where the covering of the roof is combustible - 450 mm in height above the covering,

and, where the wall is subject to paragraph (c) or (d), shall not be crossed by timber purlins or other combustible material.

Construction of certain ceilings in Class II and III buildings

(7) The ceiling of the topmost storey in a Class II or III building of Type 3 construction, including such a building which has a rise of only one storey, shall have a resistance to the incipient spread of fire to the space above itself of not less than one hour, as determined in the standard fire test, except in the case of a sole-occupancy unit in the storey where all the internal walls bounding the sole-occupancy unit that are required by this regulation to have a fire-resistance rating extend to the covering of the roof of the building and the covering is non-combustible.

Fire-resisting material to cover certain structural members of Class II, III and IX buildings

(8) Where a structural member of a Class II, III or IX building of Type 3 construction is -

- (a) the underside of a floor, including the sides and undersides of its floor beams, if any, where the floor is above a storey, or above a part of the building, not being a storey, that is designed, constructed or adapted for -
 - (i) the accommodation of motor vehicles;
 - (ii) the accommodation of baths, showers, laundries or closet fixtures;

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- (iii) use as a work area; or
- (iv) storage or any other ancillary use; and
- (b) a column supporting a floor referred to in paragraph (a),

and is combustible or of metal, it shall, unless the structural member has a fire-resistance rating of not less than 30 minutes, be covered in accordance with regulation 16.10 with a fire-resisting material.

Construction of certain parts of Type 3 constructions

- (9) Where a building is of Type 3 construction -

- (a) its loadbearing internal walls and fire walls, including such walls that are parts of loadbearing shafts, shall be of concrete or masonry; and

- (b) its non-loadbearing -

- (i) lift shafts and stair shafts required to be fire-resisting; and

- (ii) ventilating, pipe, garbage and like shafts that are not intended for the discharge of the hot products of combustion,

shall be of concrete, masonry or plaster on metal lath, or other material not less hard and dense than plaster on metal lath,

and -

- (c) where the building is a Class II or III building - the non-loadbearing internal walls which bound a sole-occupancy unit or separate adjoining sole-occupancy units shall be of concrete or masonry.

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TABLE 16.7(1)

TYPE 3 CONSTRUCTION: FIRE-RESISTANCE RATINGS OF STRUCTURAL MEMBERS									
Structural members	Ratings (in hours)								
	Class of building								
	II	III	V	VI	VII	VIIIa	VIIIb	IX	
External load-bearing structural members where the effective distance between such a structural member and a fire-source feature to which it is exposed is -									
less than 4.5 m	3	3	3	3	4	3	4	3	
4.5 m to less than 6 m	2	2	2	3	4	3	4	2	
6 m or more	1½	1½	2	3	4	3	4	2	
External non-loadbearing structural members where the effective distance between such a structural member and a fire-source feature to which it is exposed is -									
less than 4.5 m	3	3	3	3	4	3	4	3	
4.5 m to less than 6 m	2	2	2	3	4	3	4	2	
6 m to less than 7.5 m	1½	1½	2	3	4	3	4	2	
7.5 m to less than 9 m	1	1	1	1½	2	1½	2	1	
9 m or more	½	½	½	1	1	1	1	½	
Internal loadbearing walls and fire walls, including those bounding public corridors, public hallways and the like, or between or bounding sole-occupancy units, and those of loadbearing shafts									
	1½	1½	2	3	4	3	4	2	
Lift, ventilating, pipe, garbage, and like shafts not intended for discharge of the hot products of combustion nor loadbearing									
	½	½	½	½	½	½	½	½	

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TABLE 16.7(1) - continued

TYPE 3 CONSTRUCTION: FIRE-RESISTANCE
RATINGS OF STRUCTURAL MEMBERS

Structural members	Ratings (in hours)							
	Class of building							
	II	III	V	VI	VII	VIIIa	VIIIb	IX
Internal non-loadbearing walls, including partition walls -								
bounding public corridors, public hallways and the like	1	1	-	-	-	-	-	-
between or bounding sole- occupancy units	1½	1	-	-	-	-	-	-
bounding a stairway that is not required to be enclosed by a fire-resisting shaft .	1	1	-	-	-	-	-	-

Note: For a Class IV building, the fire-resistance rating shall be as required by, in the case of a Class IV building not within a fire zone, regulation 17.7 and, in the case of a Class IV building within a fire zone, regulation 18.6.

16.8 TYPE 4 CONSTRUCTION

General requirements

(1) Subject to this regulation, where a building is of Type 4 construction, a structural member specified in Table 16.8(1) of the building shall have a fire-resistance rating not less than that specified for it in the table, applicable to the class of building of which it is a member.

Concession for fire walls of open-deck parking stations

(2) A fire wall of an open-deck parking station of Type 4 construction, including a fire wall that is part of a shaft, shall, notwithstanding the requirements of Table 16.8(1), have a fire-resistance rating of not less than 2 hours.

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Certain external and internal walls to be constructed in certain way

(3) An external wall of a building of Type 4 construction, other than an external wall specified in Table 16.8(1), and a loadbearing internal wall, including a loadbearing internal wall that is part of a load-bearing shaft, but excluding an internal wall, if any, that supports a roof only, of a building of Type 4 construction, shall -

- (a) be of concrete or masonry; or
- (b) have its main framing, including diagonal bracing, of steel or concrete, and its sheeting, if any, of a non-combustible material.

Fire walls

(4) A fire wall of a building of Type 4 construction shall be of concrete or masonry.

Internal columns

(5) An internal column, if any, that supports a floor of a building of Type 4 construction shall be of -

- (a) steel, concrete or masonry; or
- (b) hardwood which has dimensions of not less than 125 mm x 125 mm.

Floors

(6) Subject to sub-regulation (7), a floor in a building of Type 4 construction shall -

- (a) be non-combustible; or
- (b) have its main framing, including all floor beams and joists, in -
 - (i) steel or concrete;
 - (ii) hardwood which has dimensions of not less than 100 mm x 75 mm; or
 - (iii) timber, other than hardwood, which has dimensions of not less than 125 mm x 100 mm.

Concession for certain floors

(7) Sub-regulation (6) does not apply to or in relation to a floor of a building of Type 4 construction -

- (a) laid directly on the ground; or

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(b) not laid directly on the ground, but the part of the building below which floor is not a storey and is not designed, constructed or adapted for -

(i) the accommodation of motor vehicles;

(ii) the accommodation of baths, showers, laundries or closet fixtures;

(iii) use as a work area; or

(iv) storage or any other ancillary purpose.

Class II and III buildings to comply with certain requirements of regulation 16.9

(8) A Class II or III building of Type 4 construction shall, in addition to complying with the requirements of this regulation applicable to it, comply with the requirements specified in regulation 16.9 applicable to -

(a) the fire-resistance rating and construction of internal walls, including partition walls -

(i) bounding public corridors, public hallways and the like;

(ii) between or bounding sole-occupancy units; or

(iii) bounding a stairway;

(b) the level to which a wall referred to in paragraph (a) shall extend;

(c) the protection to be given to the underside of a floor and its supporting columns, if any; and

(d) the construction of the ceiling of the topmost storey,

of the Class II or III building.

Fire-resisting material to cover certain parts of Class IX buildings

(9) Where a structural member of a Class IX building of Type 4 construction is -

(a) the underside of a floor, including the sides and undersides of its floor beams, if any, where the floor is above a storey, or above a part of the building, not being a storey, that is designed, constructed or adapted for -

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- (i) the accommodation of motor vehicles;
- (ii) the accommodation of baths, showers, laundries or closet fixtures;
- (iii) use as a work area; or
- (iv) storage or any other ancillary purpose; and
- (b) a column supporting a floor referred to in paragraph (a),

and is combustible or of metal, it shall, unless the structural member has a fire-resistance rating of not less than 30 minutes, be covered in accordance with regulation 16.10 with a fire-resisting material.

TABLE 16.8(1)

TYPE 4 CONSTRUCTION: FIRE-RESISTANCE RATINGS OF STRUCTURAL MEMBERS						
Structural members	Ratings (in hours)					
	Class of building					
	V	VI	VII	VIIIa	VIIIb	IX
External structural members where the effective distance between such a structural member and a fire-source feature to which it is exposed is less than 3 m	1	1	1	1	1	1
Fire walls	2	3	4	3	4	2

Note: For a Class IV building, the fire-resistance rating shall be as required by, in the case of a Class IV building not within a fire zone, regulation 17.7 and, in the case of a Class IV building within a fire zone, regulation 18.6.

16.9 TYPE 5 CONSTRUCTION

General requirements

(1) Subject to this regulation, where a building is of Type 5 construction, a structural member specified in Table 16.9(1) of the building shall have a fire-resistance

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rating not less than that specified for it in the table, applicable to the class of building of which it is a member.

Concession for certain external walls

(2) Where the outer part of an external wall otherwise subject to sub-regulation (1) of a building of Type 5 construction is of the required fire-resistance rating, the external wall shall, for the purposes of this Code, be deemed to comply with that sub-regulation.

External walls of certain Class VII and VIIIb buildings

(3) An external wall of -

(a) a Class VII building of Type 5 construction used for the storage or display of goods referred to in Appendix A to AS 2665; or

(b) a Class VIIIb building of Type 5 construction,

that -

(c) faces and is within 7.5 m of a boundary of an adjoining site; and

(d) is not required by Table 16.9(1) to have a fire-resistance rating,

shall be -

(e) non-combustible; or

(f) sheathed externally with non-combustible material.

Concession for certain internal walls of Class III buildings

(4) An internal wall, including a partition wall, which bounds a sole-occupancy unit, or separates adjoining sole-occupancy units, in a Class III building of Type 5 construction -

(a) is not required to have a fire-resistance rating where there is no doorway or other opening in the wall and -

(i) each sole-occupancy unit has direct egress to the ground or to an external balcony which provides egress in 2 different directions from the building; and

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- (ii) the sheeting of the wall, where not backed by concrete or masonry, is non-combustible; and
- (b) where paragraph (a) does not apply - shall be of concrete or masonry which has the required fire-resistance rating.

Fire walls

(5) The fire wall of a building of Type 5 construction which has a rise of not less than 2 storeys shall be of concrete or masonry.

Extent of certain partition walls

(6) A partition wall of a Class II or III building of Type 5 construction, required by Table 16.9(1) to have a fire-resistance rating shall extend -

- (a) to the underside of the floor, if any, immediately above the wall;
- (b) to the underside of a ceiling which has a resistance to the incipient spread of fire to the space above itself of not less than one hour, as determined in the standard fire test;
- (c) to the underside of the covering of the roof of the building, where the covering is non-combustible; or
- (d) where the covering of the roof of the building is combustible - 450 mm in height above the covering,

and, where the wall is subject to paragraph (c) or (d), shall not be crossed by timber purlins or other combustible material.

Construction of certain ceilings in Class II and III buildings

(7) The ceiling of the topmost storey in a Class II or III building of Type 5 construction, including such a building which has a rise of only one storey, shall have a resistance to the incipient spread of fire to the space above itself of not less than one hour, as determined in the standard fire test, except -

- (a) where sub-regulation (4) exempts all the internal walls bounding a sole-occupancy unit in the storey from the requirements of Table 16.9(1) - in which case the ceiling shall be covered in accordance with regulation 16.10 with a fire-resisting material; and

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- (b) in a sole-occupancy unit in the storey where all the internal walls bounding the sole-occupancy unit that are required by this regulation to have a fire-resistance rating extend to the covering of the roof of the building and the covering is non-combustible.

Fire-resisting material to cover certain structural members of Class II, III and IX buildings

(8) Where a structural member of a Class II, III or IX building of Type 5 construction is -

- (a) the underside of a floor, including the sides and undersides of its floor beams, if any, where the floor is above a storey, or above a part of the building, not being a storey, that is designed, constructed or adapted for -
- (i) the accommodation of motor vehicles;
 - (ii) the accommodation of baths, showers, laundries or closet fixtures;
 - (iii) use as a work area; or
 - (iv) storage or any other ancillary purpose; or
- (b) a column supporting a floor referred to in paragraph (a),

and is combustible or of metal, it shall, unless the structural member has a fire-resistance rating of not less than 30 minutes, be covered, in accordance with regulation 16.10, with a fire-resisting material.

TABLE 16.9(1)

TYPE 5 CONSTRUCTION: FIRE-RESISTANCE
RATINGS OF STRUCTURAL MEMBERS

Structural members	Ratings (in hours)								
	Class of building								
	II	III	V	VI	VII	VIIIa	VIIIb	IX	
External structural members where the effective distance between such a structural member and a fire-source feature to which it is exposed is less than 3 m	1	1	1	1	1	1	1	1	

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TABLE 16.9(1) - continued

TYPE 5 CONSTRUCTION: FIRE-RESISTANCE RATINGS OF STRUCTURAL MEMBERS									
Structural members	Ratings (in hours)								
	Class of building								
	II	III	V	VI	VII	VIIIa	VIIIb	IX	
Fire walls	1½	1½	1½	3	3	3	4	1½	
Internal walls, including partition walls -									
bounding public corridors, public hallways and the like	1	1	-	-	-	-	-	-	
between or bounding sole-occupancy units	1½	1	-	-	-	-	-	-	
bounding a stairway	1	1	-	-	-	-	-	-	

Note: For a Class IV building, the fire-resistance rating shall be as required by, in the case of a Class IV building not within a fire zone, regulation 17.7 and, in the case of a Class IV building within a fire zone, regulation 18.6.

16.10 FIRE-RESISTING COVERING OF CERTAIN STRUCTURAL MEMBERS

For the purposes of regulations 16.7(8), 16.8(9) and 16.9(7) and (8), the fire-resisting material of a structural member referred to in such a regulation shall be a covering or ceiling of -

- (a) 13 mm plasterboard;
- (b) 12 mm mesh-reinforced fibrous plaster in which the mesh is 13 mm x 13 mm x 0.71 mm welded wire situated not more than 6 mm from the exposed face; or
- (c) another material not less fire-resisting than 13 mm plasterboard,

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the material in each case being of fire-resisting grade and fixed in accordance with the normal trade practice applicable to the fixing of the material as a fire-resisting covering.

16.11 CONSTRUCTION OF STAIRS AND LANDINGS

Construction of stairways within fire-resisting shafts

(1) Where a stairway is within a fire-resisting shaft -

(a) the stairs and landings of the stairway shall be constructed of -

(i) reinforced or prestressed concrete not less than 75 mm in thickness, measured exclusive of topping; or

(ii) precast reinforced concrete, not prestressed, not less than 63 mm in thickness,

and a finish, surface, lining or the like shall comply with the requirements of regulation 16.17 applicable to it; and

(b) a structural member supporting the stairs or landings of the stairway shall be non-combustible and have a fire-resistance rating of not less than one hour, except that, in the case of a stair shaft fitted in accordance with regulation 55.4 with an air-pressurizing system, steel supporting members are not required to have a fire-resistance rating where -

(i) the steel supporting members have a ratio of surface area to mass not more than $25 \times 10^3 \text{ mm}^2/\text{kg}$;

(ii) the steel supporting members are supported so that thermal expansion under exposure to fire does not impose lateral forces on the walls of the shaft; and

(iii) the stairway is so designed that a local structural failure of the stairway within a storey will not result in the collapse of the stairway within another storey.

Construction of stairways not within fire-resisting shafts

(2) Where a Class II building has a rise of more than 2 storeys, the stairs and landings, including a supporting structural member, of a stairway that is not within a fire-resisting shaft within the building shall be constructed -

(a) in accordance with sub-regulation (1); or

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(b) of -

- (i) reinforced or prestressed concrete;
- (ii) steel not less than 6 mm in thickness; or
- (iii) timber that -
 - (A) is not less than 44 mm in finished thickness;
 - (B) has an average density, at a moisture content of 12%, of not less than 800 kg/m³; and
 - (C) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue.

16.12 CONSTRUCTION OF RAMPS

Where a ramp, including its landings, is within a fire-resisting shaft, it shall have a fire-resistance rating of not less than one hour.

16.13 FIRE-RESISTANCE RATINGS OF FIRE WALLS AND FLOORS
COMMON TO 2 PARTS OF BUILDING

Building with parts of different classifications

(1) Where a building has parts of different classifications -

- (a) the fire-resistance rating of a fire wall between the parts, including a Class IV part, if any, shall be not less than -
 - (i) where the parts are served in a storey by the same public corridor, public hallway or the like - 1½ hours in the storey; and
 - (ii) in any other case - the fire-resistance rating specified in this Part for both parts where such rating is the same for both parts or, where those ratings are different, the part with the greater fire-resistance rating; and
- (b) where one part is below another, a fire-resistance rating that applies, in accordance with regulation 16.5 or 16.6, for a floor in the lower part shall also apply for the floor between the parts.

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Walls bounding plant room

(2) A fire wall bounding a room designed, constructed or adapted for the housing of equipment such as lift, heating, ventilating or air-conditioning plant, or transformers, generators or other electrical equipment, or other special equipment for the servicing of the building, shall have a fire-resistance rating of not less than -

- (a) 2 hours; or
- (b) the fire-resistance rating specified in this Part for a fire wall for the class of the building in which the room is situated,

whichever is the greater.

16.14 MEZZANINE FLOORS

Requirements for mezzanine floors and supporting columns

(1) Subject to this regulation, the requirements of this Part relating to the construction of a floor and the supporting columns, if any, of the floor shall apply to and in relation to the floor of a mezzanine and its supporting columns, if any.

Concession for mezzanine of restricted area

(2) A mezzanine floor and its supporting columns, if any, in a building, are not required to have a fire-resistance rating where -

- (a) the area of the mezzanine floor is not more than 200 m² or one-third of the area of the room in which the floor is situated, whichever is the lesser;
- (b) in relation to a room which includes 2 or more mezzanines and the floors of those mezzanines are at or near the same level - the aggregate area of the floors is not more than 200 m² or one-third of the area of the room in which the floors are situated, whichever is the lesser; and
- (c) all the walls or columns that support a part of the building other than the mezzanine floor have -
 - (i) where a part of such a wall or column is within 6 m of the mezzanine floor; and

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- (ii) where such a wall or column is otherwise required by this Part to have a fire-resistance rating,

a fire-resistance rating increased, in accordance with Table 16.14(2), from that fire-resistance rating otherwise required.

TABLE 16.14(2)
INCREASED FIRE-RESISTANCE RATINGS FOR
CONSTRUCTION SURROUNDING MEZZANINES

Column 1	Column 2
Ratings otherwise required (hours)	Increased rating (hours)
$\frac{1}{2}$	1
1	$1\frac{1}{2}$
$1\frac{1}{2}$	2
2	3
3	4

16.15 CERTAIN PARTS WITHIN DUCTS OR WELLS TO BE
SPECIALLY CONSTRUCTED FOR FIRE-RESISTANCE

A beam, column or other framing member that -

- (a) passes through a duct or well within a shaft;
and
- (b) is required to have a fire-resistance rating,
shall -
- (c) be of concrete, or be encased in concrete; and
- (d) have a fire-resistance rating of not less than
2 hours.

16.16 CERTAIN CEILINGS, &c., OF CLASS II AND III
BUILDINGS TO BE NON-COMBUSTIBLE

A ceiling in a Class II or III building -

- (a) above a public corridor, public hallway or the
like, or above a stairway or ramp that is
bounded by fire-resisting walls; and

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- (b) not forming an integral part of the floor or roof immediately above the ceiling, and not being a ceiling with a resistance to the incipient spread of fire to the space immediately above itself of not less than one hour, as determined in the standard fire test,

shall be non-combustible, and, where the building is of Type 1 or 2 construction, have non-combustible supports.

16.17 MATERIALS GENERALLY

Limitations on use

(1) Subject to sub-regulations (2) and (3), a material used in a Class II, III, IV, V, VI, VII or VIII building, or in a Class IX building which is not, for the purposes of this regulation, otherwise provided for in this Code, shall have -

- (a) in the case of a sarking-type material - a flammability index not more than 26; or
- (b) when subjected to the early fire hazard test set out in AS 1530 Part 3 - a smoke-developed index not more than 8 where the spread-of-flame index is more than 5 but, in any case, a spread-of-flame index not more than 9.

Special fire tests

(2) Subject to sub-regulations (4)(c) and (5)(c), a material which does not comply with sub-regulation (1) may be used in a member or assembly of members where it is constructed so that -

- (a) where assembled in a building - the material is protected on all sides and edges from exposure to the air; and
- (b) the member or assembly of members, when subjected to the standard fire test, retains the protection required under sub-regulation (1) in position such that it continues to screen the material from access to free air for a period of not less than 10 minutes.

Certain materials deemed to comply

(3) Subject to sub-regulations (4)(c) and (5)(c), a material used in a building referred to in sub-regulation (1), which would otherwise be required to comply

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with that sub-regulation, that, when assembled in the building, is completely covered on all faces by concrete or masonry not less than 50 mm in thickness, shall be deemed to comply with that sub-regulation.

Fire-isolated stairways, passageways and ramps

(4) Where, in a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp in a building referred to in sub-regulation (1) -

(a) a material, other than a sarking-type material, is used in a ceiling or as an attachment to or part of an attachment to a structural member, or as the finish, surface, lining or the like of a structural member, the material shall -

(i) have a spread-of-flame index not more than 0;

(ii) have a smoke-developed index not more than 2; and

(iii) where combustible - be not more than 1 mm in finished thickness and be attached directly to a non-combustible substrate;

(b) a sarking-type material is used in the form of an exposed wall or ceiling, or as a finish or attachment to an exposed wall or ceiling, the material shall have a flammability index not more than 0; and

(c) a material is used in or as a component of a structural member, sub-regulations (2) and (3) shall not apply to or in relation to the material.

Public corridors and hallways, &c.

(5) Where an internal public corridor, internal public hallway or the like in a Class II or III building, or in a Class IX building which is not, for the purposes of this regulation, otherwise provided for in this Code, serving as a means of egress to a fire-isolated stairway or an external stairway used, in accordance with regulation 24.5, instead of a fire-isolated stairway to a fire-isolated passageway or fire-isolated ramp -

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- (a) a material, other than a sarking-type material, is used as the finish, surface, lining or the like, or as an attachment to, or part of an attachment to, a wall or ceiling, shall -
 - (i) have a spread-of-flame index not more than 0;
 - (ii) have a smoke-developed index not more than 5; and
 - (iii) where only one surface of the material complies with sub-paragraphs (i) and (ii) - have its non-complying surface in continuous and intimate contact with a non-combustible substrate;
- (b) a sarking-type material is used in the form of an exposed wall or ceiling, or as a finish or attachment to an exposed wall or ceiling, shall have a flammability index not more than 5; and
- (c) sub-regulations (2) and (3) shall not apply to or in relation to a material used -
 - (i) in or as a component of a structural member;
 - (ii) as the finish, surface, lining or the like; or
 - (iii) as an attachment to, or part of an attachment to, a wall or ceiling.

Restrictions on sarking-type material

(6) Subject to sub-regulations (4), (5) and (7), a sarking-type material in a building referred to in sub-regulation (1) shall, where installed in -

- (a) a building of Type 1 or 2 construction; or
- (b) a roof space which has a part above a ceiling required to have a resistance to the incipient spread of fire of not less than one hour, as determined in the standard fire test,

have a flammability index not more than 5.

Concessions for sarking-type materials in roof spaces

(7) The flammability index specified in sub-regulation (6) does not apply to or in relation to a part of a roof space, in a building of Type 3, 4 or 5 construction, above a ceiling not required to have a resistance to the

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incipient spread of fire of not less than one hour, as determined in the standard fire test, where the sarking-type materials of differing flammability indices are separated by a wall which -

- (a) has a fire-resistance rating of not less than one-hour; and
- (b) extends from below the level of the ceiling, or below the level of the lower ceiling where the ceilings are at different levels, to -
 - (i) the underside of the covering of the roof of the building where the covering is non-combustible; or
 - (ii) where the covering of the roof is combustible - 450 mm in height above the covering,

and sarking-type material, if any, which extends across the thickness of the wall has a flammability index not more than 5.

Certain finishes deemed to have required flammability indices

- (8) A material which is -
 - (a) plaster, cement render, concrete, terrazzo, ceramic tile or the like; or
 - (b) a material referred to in regulation 16.10,

shall be deemed to comply with sub-regulations (1), (4) and (5).

Fire-retardant paint not acceptable

(9) Paint or the like, formulated specifically to reduce flame spread on combustible surfaces, shall not be used for the purposes of achieving compliance with a spread-of-flame index, a smoke-developed index or a flammability index required by this Part.

Exemption of certain building parts and materials

(10) A spread-of-flame index, smoke-developed index or flammability index required by this Part shall not apply to or in relation to -

- (a) a timber-framed window;
- (b) a handrail or skirting which has a spread-of-flame index not more than 4;
- (c) a timber-faced fire door;

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- (d) an electrical switch, outlet, cover plate or the like manufactured from a material which complies with sub-regulation (1);
- (e) a material used for -
 - (i) roof covering in continuous contact with a substrate;
 - (ii) adhesives; or
 - (iii) damp-proof courses, flashing, caulking, sealing, ground moisture barriers or the like;
- (f) conventional paint, varnish, paint formulated specifically to reduce flame spread, lacquer or like finish excluding -
 - (i) nitro-cellulose lacquer; or
 - (ii) coatings commonly known as "high-build" paint; or
- (g) a clear or translucent rooflight of glassfibre reinforced polyester where -
 - (i) the roof in which it is installed forms part of a single-storey building of Type 5 construction;
 - (ii) the material is used as part of the roof covering;
 - (iii) it is not within 1.2 m of a gutter;
 - (iv) it is not less than 1.5 m from another such light, if any;
 - (v) it is not more than 14 m² in area;
 - (vi) the area of such rooflights per 70 m² of roof surface is not more than 14 m²; and
 - (vii) it is not otherwise prohibited in this Code.

Combustible attachments to fire-resisting or non-combustible members

(11) Subject to regulations 16.19 and 16.24, a combustible material may be used as a finish, surface, lining or the like on, or as an attachment to or part of an attachment to, a structural member required to have a fire-resistance rating where the combustible material, or its use, complies with this regulation.

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16.18 CONSTRUCTION OF CERTAIN EXTERNAL WALLS AND STEELWORKS

Calculation of number of storeys

(1) For the purposes of this regulation, regulation 19.1 shall apply to and in relation to the determination of the number of storeys contained in a building.

Concession for building of one storey

(2) Where an external wall required to have a fire-resistance rating is in a building that contains one storey only, a steel column incorporated in the external wall is not required to have a fire-resistance rating.

Concession for building of more than one storey

(3) Where, in a building that contains more than one storey, a steel column that supports a roof truss or beam at an external wall has no fire-resistance rating or a fire-resistance rating that is less than that required for the wall -

- (a) the column and the truss or beam, as the case may be, shall be constructed so that in the event of a fire they will not tend to overturn the wall; and
- (b) the wall shall be constructed so that it does not at any time depend upon the column for support.

16.19 ANCILLARY CONSTRUCTION AT EXTERNAL WALLS

Application

(1) A reference in this regulation to a building is a reference to a building of Type 1 or 2 construction.

Article, &c., attached to external wall of building

(2) Subject to sub-regulation (3), an article or material that is attached to, or forms part of, the outer face of an external wall of a building shall be non-combustible.

Exemption

(3) Sub-regulation (2) does not apply to or in relation to an article specified in column 1 of Table 16.19(3) where the article complies with -

- (a) such requirements, if any, as are specified in column 2 of the table opposite the article so specified; and

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- (b) such requirements, if any, as are imposed for or in relation to the article by any other regulation.

Combustible signs

(4) A combustible sign, being an article referred to in sub-regulation (3), that is attached to, or forms part of, the outer face of an external wall of a building shall -

- (a) be situated not less than 6 m from an external stairway used, in accordance with regulation 24.5, instead of a fire-isolated stairway;
- (b) be situated not less than 1.1 m from an unprotected opening except where the sign is situated in the same external wall, and in the same storey, as that in which the opening is situated;
- (c) in relation to an unprotected opening other than an unprotected opening referred to in paragraph (b) - be situated not less than 1.1 m from another unprotected opening, being an opening which gives access to a part of the building that is separated by a fire wall from the part of the building to which that first-mentioned opening gives access, which is situated in the same external wall, and in the same storey, as that in which that first-mentioned opening is situated;
- (d) where the sign is situated more than 6 m above the floor of the lowest storey from which direct egress to a street or open space is provided -
 - (i) have anchorages and framework constructed of non-combustible material; and
 - (ii) be situated not less than 3 m from a fire-source feature, if any, to which it is exposed; and
- (e) not be attached to a part of the wall which consists of a spandrel, slab or other construction which is required by regulation 22.3(2) to be provided in relation to the wall.

Meaning of "attachment"

(5) For the purposes of this regulation, an article or material is also attached to an external wall where the article or material is attached to another article or material that is attached to the wall.

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Interpretation

- (6) In this regulation -
- (a) a reference, in relation to an article, to the lowest storey from which direct egress to a street or open space is provided is a reference to -
- (i) the lowest storey in the building from which such egress is provided through the same facade of the building as that to which the article is attached, or of which the article forms a part; or
- (ii) where no egress is provided in accordance with sub-paragraph (i) through the facade referred to in that sub-paragraph - the lowest storey in that building from which such egress is provided; and
- (b) a reference to an unprotected opening is a reference to an opening which is not protected in accordance with regulation 22.4(2).

TABLE 16.19(3)

Column 1	Column 2
Type of article	Requirements
An article which consists of - (a) a stairway; or (b) a balustrade	The article shall not be attached to a building which - (a) is within a fire zone; and (b) has a rise of more than 2 storeys
An article which consists of a handrail to - (a) a stairway; or (b) a balcony, but excluding a balustrade	The article shall be situated not more than 25 m in height above the floor of the lowest storey from which direct egress to a street or open space is provided
An article which consists of a display window, its frame, its mullions and a transom, if any, upon which it is set	The article shall not be situated in a storey which is above a storey from which direct egress to a street or open space is provided

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TABLE 16.19(3) - continued

Column 1	Column 2
Type of article	Requirements
An article which consists of -	The article shall not -
(a) a window (other than a display window) its frame, its mullions and a transom, if any, upon which it is set; or	(a) be situated in a storey which is more than 3 storeys above the lowest storey from which direct egress to a street or open space is provided; or
(b) a door, other than a fire door, and its frame	(b) be situated in, or form part of, an opening which is required to be protected in accordance with regulation 22.4(2)
An article which consists of -	The article shall not be situated in a storey which is more than 3 storeys above the lowest storey from which direct egress to a street or open space is provided
(a) a window shutter;	
(b) an awning, or a sun-blind or hood, which is made of fabric, together with supporting framework;	
(c) guttering;	
(d) a downpipe;	
(e) an electrical wiring conduit; or	
(f) a flag pole	
An article which consists of -	The article shall be not more than 0.5m ² in area
(a) a servery hatch; or	
(b) a service hatch	
An article which consists of a timber-faced fire door	No requirements
An article which consists of purlins or battens of an awning	The article shall be situated not more than 6 m in height above the floor of the lowest storey from which direct egress to a street or open space is provided

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TABLE 16.19(3) - continued

Column 1	Column 2
Type of article	Requirements
An article which consists of a sign	The article shall comply with the requirements of sub-regulation (4)

16.20 ROOFING FELT ON ROOF REQUIRED TO HAVE FIRE-RESISTANCE RATING

A roof required by regulation 16.5 to have a fire-resistance rating may be covered with built-up roofing which consists of successive layers of bitumen-impregnated, tar-impregnated or like roofing felt.

16.21 ROOF SUPERIMPOSED ON CONCRETE SLAB IN TYPES 1 AND 2 CONSTRUCTIONS

A roof, of a building of Type 1 or 2 construction, which does not comply with this Part as to fire-resisting construction may be superimposed on a concrete slab roof where -

- (a) the superimposed roof and the construction, if any, between it and the concrete slab roof are non-combustible; and
- (b) the concrete slab roof complies with the requirements of this Part as to fire-resisting construction of a roof.

16.22 CONCESSION FOR CERTAIN STRUCTURES SITUATED ON ROOFS

This Part does not apply to or in relation to a non-combustible structure situated on a roof and which contains -

- (a) hot-water or other water tanks;
- (b) ventilating ductwork;
- (c) ventilating fans and their motors;
- (d) air-conditioning chillers;
- (e) window cleaning equipment;
- (f) lift equipment; or

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- (g) other service units that are non-combustible and do not contain combustible fluids.

16.23 LINTELS

Where fire-resistance rating required

(1) Subject to sub-regulation (2), a lintel of a building shall have the fire-resistance rating, if any, required for the part of the building in which it is situated.

Where no fire-resistance rating required

(2) Sub-regulation (1) does not apply to or in relation to a lintel, other than a lintel which helps to support a fire door or fire shutter, that spans an opening -

- (a) in a wall of a building which contains only one storey;
- (b) in a non-loadbearing wall of a Class II building;
- (c) not more than 3 m in width, and bridged by non-loadbearing masonry; or
- (d) not more than 1.8 m in width, and bridged by loadbearing masonry, being part of a solid wall or part of one of the leaves of a cavity wall, the masonry in each case being not more than 150 mm in thickness.

16.24 APPURTENANT CONSTRUCTION NOT TO IMPAIR FIRE-RESISTING PERFORMANCE

The design of a method of attachment or installation of -

- (a) a facing or finish; or
- (b) ducting or any other service,

to a part of a building required to have a fire-resistance rating, shall provide for the attachment or installation to proceed without impairing the potential fire-resisting performance of the part.

16.25 BUILDINGS ABOVE CERTAIN PUBLIC FACILITIES

Meaning of public facility

(1) A reference in this regulation to a public facility is a reference to a street, railway, bus terminal or like facility.

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Fire-resistance rating of certain structural members

(2) The Building Controller shall determine the fire-resistance rating of a structural member in, immediately above, or immediately alongside a public facility and, where the Building Controller does make such a determination, no such structural member shall have a fire-resistance rating less than that so determined for it.

Construction of certain structural members

(3) For the purposes of sub-regulation (2), the Building Controller may require a structural member referred to in that sub-regulation which is a column or floor to be of reinforced or prestressed concrete, or structural steel encased in concrete.

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PART 17 - CONSTRUCTION REQUIRED EXCEPT IN FIRE ZONES

17.1 APPLICATION

Part applies to buildings not in fire zone

(1) Subject to sub-regulation (2) and regulation 18.7, the requirements of this Part apply to and in relation to buildings not situated in a fire zone.

Part does not apply to open-deck parking stations

(2) This Part does not apply to or in relation to an open-deck parking station which -

- (a) contains not more than 3 storeys; and
- (b) is of Type 4 construction in which -
 - (i) the floors are of concrete; and
 - (ii) all the column and floor beams are of steel or concrete.

17.2 RISE IN STOREYS

Determination of rise in storeys

(1) Subject to this regulation, the greatest number of storeys at any part of the external walls of a building, counted above the finished ground adjoining the part, shall be the rise in storeys of the building.

Calculation where wall abuts a boundary of an adjoining site

(2) Where a part of an external wall of a building abuts the boundary of an adjoining site, the natural ground level at that part of the boundary or, where there is doubt as to the natural ground level, that natural ground level as assessed by the Building Controller, shall, for the purposes of sub-regulation (1), be the finished ground for the part of the external wall.

Certain storeys excluded from calculation of rise in storeys

(3) A calculation under sub-regulation (1) of the rise in storeys of a building shall not include a storey which is situated -

- (a) at the top of the building and which contains only heating, ventilating, lift or other equipment, water tanks or like service units; or

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- (b) partly below the finished ground adjoining the part of the external wall from which the rise in storeys of the building is calculated and which extends not more than 1 m in height above the average level of that ground, the measurements being taken to -

- (i) the underside of the ceiling; or
- (ii) where the storey has no ceiling - the underside of the construction at the top, of the storey, except that, where the part of the wall is more than 12 m in length, the average level of the finished ground adjoining it, used in the measurement, shall be the average for that 12 m part of its length where the ground is lowest.

Certain mezzanines deemed to be storeys

(4) For the purposes of a calculation under sub-regulation (1) of the rise in storeys of a building -

- (a) a mezzanine which is more than 200 m² in floor area; or
- (b) 2 or more mezzanines at or near the same level in a room and which are more than 200 m² in aggregate floor area,

in the building, shall be deemed to be a storey in the part of the building in which the mezzanine or mezzanines, as the case may be, is or are situated.

Certain high storeys deemed to be 2 storeys

- (5) Where a storey of a building is -
 - (a) above ground and has an internal height of more than 5.2 m; and
 - (b) not the only storey of the building above ground,

the storey shall, for the purposes of this Code, be deemed to be 2 storeys.

Determination of rise in storeys of fire-separated parts

(6) The rise in storeys of a part of a building that is, in accordance with Part 23, fire-separated from the remainder of the building shall be determined as though the part were a building.

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17.3 TYPE OF FIRE-RESISTING CONSTRUCTION REQUIRED

Application

(1) Subject to regulations 17.4, 17.5 and this regulation, the type of fire-resisting construction required of a Class II, III, V, VI, VII, VIII or IX building shall be that type specified in Table 17.3(1) applicable to the class of building, and the rise of storeys of the class of building, specified in the table.

Fire-separated parts

(2) A part of a building that is, in accordance with Part 23, fire-separated from the remainder of the building shall be subject to sub-regulation (1) as if the part were a building.

Buildings of mixed classifications

(3) Where the storeys of a building have different classifications, the type of fire-resisting construction required for the building shall be the type of fire-resisting construction that is the most fire-resisting of all the types of fire-resisting construction arising from the application of sub-regulation (1) to each such storey, for which purpose -

- (a) a classification which applies to such a storey shall apply to the storeys, if any, vertically below it; and
- (b) such a storey and the storeys, if any, vertically below it shall comprise an entire building.

TABLE 17.3(1)

TYPE OF FIRE-RESISTING CONSTRUCTION REQUIRED

Rise in storeys	Class of building								
	II	III	V	VI	VII	VIIIa	VIIIb	IXa	IXb
	Type of fire-resisting construction								
6 or more	1	1	1	1	1	1	1	1	1
5	1	1	2	1	1	1	1	1	1

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TABLE 17.3(1) - continued
TYPE OF FIRE-RESISTING CONSTRUCTION REQUIRED

Rise in storeys	Class of building								
	II	III	V	VI	VII	VIIIa	VIIIb	IXa	IXb
Type of fire-resisting construction									
4	1	1	2	1	2	2	1	1	1
3	1	1	3	2	3	3	3	1	1
2	3	3	5	5	5	5	5	2	3
1	5	5	5	5	5	5	5	5	5

Note: For a Class IV building, fire-resisting construction shall be as required by regulation 17.7.

17.4 TYPE OF FIRE-RESISTING CONSTRUCTION REQUIRED IN CERTAIN CLASS II BUILDINGS

Where regulation 17.3 does not apply

(1) Regulation 17.3 does not apply to or in relation to a building which is -

(a) entirely a Class II building; and

(b) designed so that -

(i) no part of a sole-occupancy unit in the building is vertically above a part of another sole-occupancy unit; and

(ii) the floor between each sole-occupancy unit in the building and a garage, if any, below it is constructed of reinforced or prestressed concrete.

Type of construction required for buildings referred to in sub-regulation (1)

(2) A building referred to in sub-regulation (1) shall have a fire-resisting construction of -

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- (a) where 3 or more storeys are contained in a sole-occupancy unit in the building - Type 2; and
- (b) where one or 2 storeys are contained in a sole-occupancy unit in the building - Type 5.

17.5 CLASS II AND III BUILDINGS WITH RISE OF 2 STOREYS

A Class II or III building which has a rise of 2 storeys and which complies with Part 24 as to means of egress from sole-occupancy units in such a building may, notwithstanding Table 17.3(1), be of Type 5 construction.

17.6 EXISTING CLASS I BUILDING CONVERTED TO CLASS II BUILDING

Type of construction required

(1) Where building approval is given for the conversion of an existing Class I building to a Class II building, the building as so converted shall, subject to regulations 17.4 and 17.5 and sub-regulation (2), be of that type of fire-resisting construction specified in the relevant column of Table 17.3(1) applicable to the Class II building in accordance with the rise in storeys of the building.

Concession for external walls of certain Class II buildings

(2) The external walls of a Class II building referred to in sub-regulation (1) are not required to have a fire-resistance rating where the building contains not more than 2 storeys.

17.7 REQUIREMENTS FOR CLASS IV BUILDINGS

A structural member of a Class IV building shall -

- (a) where the structural member is a wall or partition wall that separates the Class IV part from the remainder of the building in which it is situated - have the fire-resistance rating and type of construction, or other construction permitted under Part 16, applicable to and in relation to a Class II part of a building with a wall or partition wall that separates the Class II part from the remainder of the building in which it is situated, as if, for that purpose, the Class IV part were a Class II part; and

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- (b) where it is a structural member other than a structural member referred to in paragraph (a), have -

- (i) that fire-resistance rating and type of construction; or

- (ii) other construction permitted under Part 16,

applicable under this Code to and in relation to a structural member of a like kind situated in the building of which the Class IV part forms a part.

17.8 LIGHTWEIGHT CONSTRUCTIONS

Restrictions on use of lightweight constructions

(1) Subject to sub-regulation (2), a beam or column, or a wall, other than a partition wall, required to have a fire-resistance rating, in a building with a rise of more than 4 storeys, shall not incorporate or be of lightweight construction where it is in -

- (a) a Class VI, VII or VIII part; or

- (b) a part, regardless of its classification, that is below the level of a Class VI, VII or VIII part,

of the building.

Where sub-regulation (1) does not apply

(2) Sub-regulation (1) does not apply to or in relation to a Class VI part of a building which is designed, constructed or adapted for use as -

- (a) a cafe or restaurant;

- (b) a tea room, coffee room, milk or softdrink bar;

- (c) a hairdresser's or barber's shop; or

- (d) a shop of any kind, the normal functioning and servicing of which would not, in the opinion of the Building Controller, represent undue risk of damage to the lightweight construction of a beam, column or wall in the shop.

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PART 18 - CONSTRUCTION REQUIRED IN FIRE ZONES

18.1 APPLICATION

Part applies to buildings in fire zone

(1) The requirements of this Part apply to and in relation to buildings situated in a fire zone.

Buildings only partially in fire zone

(2) For the purposes of this Part, a building which is not entirely within a fire zone shall be deemed to be entirely within the fire zone where not less than half its total volume, measured over the roof and the external walls of the building, is within the fire zone and, in any other case, the building shall be deemed to be entirely without the fire zone.

18.2 CONSTRUCTION REQUIRED IN PRIMARY FIRE ZONE

The type of fire-resisting construction required in a Class II, III, V, VI, VII, VIII or IX building situated in a primary fire zone is that specified in column 2 of Table 18.2 opposite the rise in storeys, specified in column 1 of the table, of the building.

TABLE 18.2

TYPE OF FIRE-RESISTING CONSTRUCTION REQUIRED IN PRIMARY FIRE ZONE

Column 1	Column 2
Rise in storeys	Type of construction
3 or more	1
2	2
1	3

Note: For a Class IV building, fire-resisting construction shall be as required by regulation 18.6.

18.3 CONSTRUCTION REQUIRED IN SECONDARY FIRE ZONE

The type of fire-resisting construction required in a Class II, III, V, VI, VII, VIII or IX building situated in a secondary fire zone is that specified in Table 18.3 opposite the rise in storeys, specified in the table, of the building.

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TABLE 18.3

TYPE OF FIRE-RESISTING CONSTRUCTION REQUIRED IN SECONDARY FIRE ZONE

Rise in Storeys	Class of building								
	II	III	V	VI	VII	VIIIa	VIIIb	IXa	IXb
Type of fire-resisting construction									
4 or more	1	1	1	1	1	1	1	1	1
3	1	1	2	2	2	2	2	1	1
2	2	2	3	3	3	3	3	2	2
1	3	3	3	3	3	3	3	3	3

Note: For a Class IV building, fire-resisting construction shall be as required by regulation 18.6.

18.4 FIRE-SEPARATED PARTS

A part of a building that is, in accordance with Part 23, fire-separated from the remainder of the building shall be subject to regulation 18.2 or 18.3 as if the part were a building.

18.5 BUILDINGS OF MIXED CLASSIFICATIONS

Where the storeys of a building have different classifications, the type of fire-resisting construction required for the building shall be the type of fire-resisting construction that is the most fire-resisting of all the types of fire-resisting construction arising from the application of regulation 18.2 or 18.3 to each such storey, for which purpose -

- a classification which applies to such a storey shall apply to the storeys, if any, vertically below it; and
- such a storey and the storeys, if any, vertically below it shall comprise an entire building.

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18.6 REQUIREMENTS FOR CLASS IV BUILDINGS

A structural member of a Class IV building shall -

- (a) where the structural member is a wall or partition wall that separates the Class IV part from the remainder of the building in which it is situated - have the fire-resistance rating and type of construction, or other construction permitted under Part 16, applicable to and in relation to a Class II part of a building with a wall or partition wall that separates the Class II part from the remainder of the building in which it is situated, as if, for that purpose, the Class IV part were a Class II part; and
- (b) where it is a structural member other than a structural member referred to in paragraph (a), have -
 - (i) that fire-resistance rating and type of construction; or
 - (ii) other construction permitted under Part 16, applicable under this Code to and in relation to a structural member of a like kind situated in the building of which the Class IV part forms a part.

18.7 USE OF LIGHTWEIGHT CONSTRUCTIONS

Regulation 17.8 applies to and in relation to the use of lightweight constructions in buildings to which this Part applies.

18.8 CONSTRUCTION REQUIRED FOR CERTAIN CLASS I AND X BUILDINGS

A Class I building which has a rise of more than 2 storeys, or a Class X building which has a rise of more than one storey, shall have external walls of concrete or masonry.

18.9 OPEN-DECK PARKING STATIONS

This Part does not apply to or in relation to an open-deck parking station where -

- (a) the number of storeys the station contains is not more than the number specified in Table 18.9, in accordance with the category of fire zone in which the building is situated and the average area across each storey, measured to the outside of the building and regardless of internal walls, including fire walls, if any;

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- (b) the area across a storey in the station is not less than the area across a storey at a higher level; and
- (c) the building is of Type 4 construction in which -
 - (i) floors of concrete or concrete and steel decking are provided at each parking level;
 - (ii) the floors are structurally continuous across all floor beams and have a fire-resistance rating of not less than 30 minutes;
 - (iii) a floor beam which has any part less than 3 m from the outside of a floor has a fire-resistance rating of not less than 1½ hours;
 - (iv) a floor beam or column not otherwise referred to in this paragraph is of steel or concrete; and
 - (v) a part of an internal column that -
 - (A) is exposed to a fire-source feature; and
 - (B) has an effective distance of less than 9 m between it and the fire-source feature,has a fire-resistance rating of not less than 2 hours.

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TABLE 18.9

MAXIMUM PERMISSIBLE NUMBER OF STOREYS IN ACCORDANCE WITH
CATEGORY OF FIRE ZONE AND AVERAGE AREA ACROSS EACH STOREY

Maximum permissible number of storeys for an average area across each storey of -						
Category of fire zone	Less than 650 (m ²)	650 to less than 900 (m ²)	900 to less than 1,300 (m ²)	1,300 to less than 1,800 (m ²)	1,800 to less than 3,200 (m ²)	3,200 to less than 7,400 (m ²)
Primary	5	6	7	8	9	10
Secondary	4	5	6	7	8	9

Note: In this table, the area across a storey includes
the areas above the ramps that lead down from the
storey.

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PART 19 - FLOOR AREA LIMITATIONS

19.1 INTERPRETATION

Certain storeys excluded from calculations

(1) For the purposes of this Part, the number of storeys contained in a building shall not include a storey situated at the top of the building and containing only heating, ventilating, lift or other equipment, water tanks or like service units.

Class VII and VIII buildings of partly one and 2 storeys

(2) For the purposes of this Part, a Class VII or VIII building shall be deemed to contain only one storey where -

- (a) it contains 2 storeys in one or more parts and only one storey in the remainder of the building; and
- (b) the sum of the floor areas of the storeys in the part or parts which contains 2 storeys does not exceed one-fourth of the floor area of the remainder of the building.

19.2 GENERAL FLOOR AREA LIMITATIONS

Application

(1) Subject to regulations 19.3 and 19.4, a reference in this regulation to a building is a reference to a Class V, VI, VII or VIII building of Type 2, 3, 4 or 5 construction.

Limitations on total floor area

(2) The sum of the floor areas of all the storeys contained in a building shall be not more than the maximum floor area specified in Table 19.2(2) for the building.

Limitations to apply to individual storeys in certain cases

(3) Where, in a building which contains 2 or more storeys -

- (a) each floor, including its vertical supports, between the storeys of the building has a fire-resistance rating of not less than 2 hours;
- (b) the storeys of the building are not inter-connected by escalators;

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- (c) each lift well, stairway or ramp in the building is bounded by a shaft that has a fire-resistance rating of not less than 2 hours; and
- (d) where the building is of Type 4 or 5 construction - its external walls are of concrete or masonry,

Table 19.2(2) shall apply to and in relation to each storey of the building as if the storey were a complete building.

Fire-separated parts of storey

(4) Where a storey of a building is, in accordance with Part 23, fire-separated into parts and -

- (a) the building contains only one storey - the relevant maximum floor area set out in Table 19.2(2) shall apply to each part as if the part were a complete building; and
- (b) the building contains 2 or more storeys and complies with sub-regulation (3) - the relevant maximum floor area set out in Table 19.2(2) shall apply to each part as if the part were a complete storey.

TABLE 19.2(2)

MAXIMUM FLOOR AREAS IN ACCORDANCE WITH TYPE OF FIRE-
RESISTING CONSTRUCTION, CLASSIFICATION AND WHETHER
OR NOT SPRINKLER SYSTEM IS INSTALLED

Type of fire-resisting construction of building	Class V		Class VI	
	Not sprinklered (m ²)	Sprinklered (m ²)	Not sprinklered (m ²)	Sprinklered (m ²)
Type 2	5,500	9,000	3,500	5,500
Type 3	5,500	9,000	3,500	5,500
Type 4	4,500	7,500	3,000	4,500
Type 5	2,800	4,500	2,000	2,800

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TABLE 19.2(2) - continued

Class VII

Type of fire-resisting construction of building	For storage or display of goods not referred to in Appendix A to AS 2665 (low or medium hazard)		For storage or display of goods referred to in Appendix A to AS 2665 (high hazard)	
	Not sprinklered (m ²)	Sprinklered (m ²)	Not sprinklered (m ²)	Sprinklered (m ²)
Type 2	5,500	9,000	3,500	5,500
Type 3	5,500	9,000	3,500	5,500
Type 4	4,500	7,500	3,000	4,500
Type 5	2,800	4,500	2,000	2,800

Type of fire-resisting construction of building	Class VIIla For storage or display of goods not referred to in Appendix A to AS 2665 (low or medium hazard)		Class VIIlb For storage or display of goods referred to in Appendix A to AS 2665 (high hazard)	
	Not sprinklered (m ²)	Sprinklered (m ²)	Not sprinklered (m ²)	Sprinklered (m ²)
Type 2	5,500	9,000	3,500	5,500
Type 3	5,500	9,000	3,500	5,500
Type 4	4,500	7,500	3,000	4,500
Type 5	2,800	4,500	2,000	2,800

Note: In this table, the maximum floor areas apply to and in relation to -

- (a) the total floor area throughout a single or multi-storey building; or
- (b) where the requirements of regulation 19.2(3) are met - the floor areas of each storey of a building.

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19.3 EXEMPTION FOR SINGLE-STOREY BUILDING NOT MORE THAN 18,000 m² IN FLOOR AREA

Regulation 19.2 does not apply to or in relation to a building which contains only one storey and which is not more than 18,000 m² in floor area and -

- (a) which has an open space, not less than 18 m in width, in accordance with regulation 19.5, provided on, or associated with, the site of the building; or
- (b) the building is of Type 2 or 3 construction and -
 - (i) the space below its roof is, in accordance with regulation 19.6, divided into compartments;
 - (ii) has, in accordance with regulation 19.7, approved automatic smoke-and-heat vents;
 - (iii) its windows and other openings in each of its external walls which faces the boundary of an adjoining site comply with regulation 19.8; and
 - (iv) each of its external walls which faces the boundary of an adjoining site has, in accordance with regulation 19.9, a parapet, except where that regulation permits the height of the parapet to be reduced to nil.

19.4 EXEMPTION FOR SINGLE-STOREY CLASS VI, VII AND VIII BUILDINGS MORE THAN 18,000 m² IN FLOOR AREA

General conditions of exemption

(1) Regulation 19.2 does not apply to or in relation to a Class VI, VII or VIII building which contains only one storey and which is more than 18,000 m² in floor area and -

- (a) which has an open space, not less than 24 m in width, in accordance with regulation 19.5, provided on, or associated with, the site of the building; or
- (b) the building is of Type 2 or 3 construction and -
 - (i) the space below its roof is, in accordance with regulation 19.6, divided into compartments;

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- (ii) has, in accordance with regulation 19.7, approved automatic smoke-and-heat vents;
- (iii) its windows and other openings in each of its external walls which faces the boundary of an adjoining site comply with regulation 19.8;
- (iv) each of its external walls which faces the boundary of an adjoining site has, in accordance with regulation 19.9, a parapet, except where that regulation permits the height of the parapet to be reduced to nil; and
- (v) an approved sprinkler system installed throughout.

Two or more buildings on one site

(2) For the purposes of sub-regulation (1), all Class VI, VII and VIII buildings on the one site that are within 27 m of each other shall be deemed to be one building, except where -

- (a) the external walls which face each other in the buildings have a fire-resistance rating of not less than 2 hours; and
- (b) each wall referred to in paragraph (a) complies with regulations 19.8 and 19.9 as though the buildings were on different sites, with an imaginary boundary line in a position nominated by the person on whose behalf the building is constructed.

19.5 REQUIREMENTS FOR OPEN SPACES AROUND LARGE SINGLE-STOREY BUILDINGS

An open space required by this Part to be provided on, or in association with, a site shall -

- (a) subject to paragraph (b), be contiguous with, or straddle all the boundaries of, the site, and includes a road, river or public place adjoining the site which is within 6 m of the site;
- (b) not be built upon or designed for the storage or processing of materials, or a like purpose, except that guard houses and service buildings, including substations and pump houses, may encroach upon the width of the open space where the Building Controller is satisfied that the encroachment will not unduly -
 - (i) impede fire fighting at any part of the perimeter of the site; and

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- (ii) add to the risk of spread of fire to a building on an adjoining site; and

- (c) not include a part of an adjoining site.

19.6 DRAUGHT CURTAINS, VERTICAL GLAZING AND SMOKE-AND-HEAT COMPARTMENTS

For the purposes of regulations 19.3(b)(i) and 19.4(1)(b)(i), the space below the roof of a building is divided into compartments where -

- (a) the compartments are formed by -
 - (i) vertical, non-combustible, non-shattering, draught curtains, including asbestos silica board but excluding asbestos cement board, hung from the roof structure; or
 - (ii) the use of a "saw-tooth" roof in which the vertical part of the "saw-tooth" comprises non-combustible and non-shattering material or wired glass not less than 6 mm in thickness;
- (b) the curtains or vertical part of the "saw-tooth" referred to in paragraph (a) extend from the roof sheeting to a level not less than 1.5 m below the lowest part of the opening, to the outside air, of the lowest required smoke-and-heat vent;
- (c) each hole through which a non-metallic curtain is fixed is not less than 10 mm in diameter oversize and so situated as to allow expansion of the curtain in the event of a fire within the building;
- (d) none of the compartments so formed are more than 1,000 m² in area, measured in a horizontal plane;
- (e) in spaces of abnormal fire hazard within the meaning of Appendix A to AS 2665, the horizontal distance between -
 - (i) the curtains or vertical part of the "saw-tooth" referred to in paragraph (a); and
 - (ii) the horizontal distance between an external wall and the curtain or glazing, if any, nearest to it,

are not more than 30 m; and

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- (f) a ceiling or like construction is not used in or below such a compartment.

19.7 AUTOMATIC SMOKE-AND-HEAT VENTS

For the purposes of regulations 19.3(b)(ii) and 19.4(1)(b)(ii), an approved automatic smoke-and-heat vent is an automatic smoke-and-heat vent designed and constructed in accordance with AS 2665.

19.8 LIMITATIONS ON AREAS OF WINDOW OPENINGS

For the purposes of regulations 19.3(b)(iii) and 19.4(b)(iii), the windows and other openings referred to in such a regulation shall be such that the aggregate area of those windows and other openings are not more than the maximum permissible aggregate area of windows and other openings specified in Table 19.8, in accordance with the distance of the wall in which those windows and other openings are situated from the boundary of the adjoining site it faces.

TABLE 19.8

MAXIMUM PERMISSIBLE AGGREGATE AREAS OF WINDOWS AND OTHER OPENINGS			
Distance of wall from boundary (m)	Height of parapet (m)	Maximum permissible aggregate area of openings (m ²)	
Not more than 1.5	1.5	Nil	
1.5 to not more than 2	1	Nil	
	1.25	0.5	in any 2 m length of wall
	1.5	1	in any 2 m length of wall
2 to not more than 3	0.75	Nil	
	1	0.5	in any 3 m length of wall
	1.25	1	in any 3 m length of wall
	1.5	2	in any 3 m length of wall
3 to not more than 4.5	0.5	Nil	
	0.75	1	in any 4 m length of wall
	1	2	in any 4 m length of wall
	1.25	3	in any 4 m length of wall
	1.5	4	in any 4 m length of wall
4.5 to not more than 6	Nil	Nil	
	0.25	1.5	in any 5 m length of wall
	0.5	3	in any 5 m length of wall
	0.75	4	in any 5 m length of wall
	1	5	in any 5 m length of wall
	1.25	6.5	in any 5 m length of wall
	1.5	7.5	in any 5 m length of wall

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TABLE 19.8 - continued

MAXIMUM PERMISSIBLE AGGREGATE AREAS OF WINDOWS AND OTHER OPENINGS		
Distance of wall from boundary (m)	Height of parapet (m)	Maximum permissible aggregate area of openings (m ²)
6 to not more than 7.5	Nil	4 in any 7 m length of wall
	0.25	5 in any 7 m length of wall
	0.5	7 in any 7 m length of wall
	0.75	9 in any 7 m length of wall
	1	10.5 in any 7 m length of wall
	1.25	12.5 in any 7 m length of wall
	1.5	14 in any 7 m length of wall
7.5 to not more than 9	Nil	9 in any 9 m length of wall
	0.25	11.5 in any 9 m length of wall
	0.5	13.5 in any 9 m length of wall
	0.75	16 in any 9 m length of wall
	1	18.5 in any 9 m length of wall
9 to not more than 10.5	Nil	17 in any 11 m length of wall
	0.25	19.5 in any 11 m length of wall
	0.5	22.5 in any 11 m length of wall
10.5 to not more than 13.5	Nil	30.5 in any 15 m length of wall
13.5 to not more than 18	Nil	45.5 in any 18 m length of wall
18 and over	Nil	No limitation

19.9 PARAPETS

Height of parapet

(1) Subject to sub-regulation (2), for the purposes of regulations 19.3(b)(iv) and 19.4(1)(b)(iv), a parapet on an external wall shall have a height not less than that specified in column 2 of Table 19.8, in accordance with -

- (a) the distance of the wall from the boundary of the adjoining site it faces; and
- (b) the aggregate area of windows and other openings to be used below the parapet.

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Concession in height of parapet

(2) The height required by Table 19.8 of a parapet referred to in sub-regulation (1) may be reduced by an amount equal to one-third the distance to which a roof extends into the building at the external wall for which the parapet is provided where -

- (a) the fire-resistance rating of that part of the roof extending in from the external wall is not less than one hour; and
- (b) the supports of that part of the roof have a fire-resistance rating of not less than one hour.

19.10 CHANGE OF USE OF EXISTING CLASS VII AND VIII BUILDINGS

An existing building that is not being used for -

- (a) where the building is a Class VII building, the storage or display of -
 - (i) goods referred to in Appendix A to AS 2665; or
 - (ii) combustible goods; or
- (b) where the building is a Class VIII building, a handicraft or process -
 - (i) referred to in Appendix A referred to in paragraph (a)(i); or
 - (ii) in which a principal material is combustible,

shall not be so used unless the building complies with the requirements of this Part applicable to such a use.

19.11 CERTAIN BUILDINGS EXEMPT FROM REQUIREMENTS OF THIS PART

Certain Class VII and VIII buildings exempted

(1) The Building Controller may exempt from the requirements of this Part a Class VII or VIII building in relation to which there is a certificate issued by the Director stating that, in the opinion of the Director, substantially all of the materials stored or displayed, or used in a handicraft or process, in the building are non-combustible.

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Certain Class V, VI, VII and VIII buildings exempted

(2) Subject to sub-regulation (3), the Building Controller may exempt from all or any of the requirements of this Part a Class V, VI, VII or VIII building in relation to which there is a certificate issued by the Director to the effect that -

- (a) satisfactory provision, alternative to any or all of the requirements of this Part, and in addition to those specified or referred to in Part 27, have been made to restrict or combat the spread of fire in the building; or
- (b) where the building is an existing building which is to be altered - there is no necessity to require that the whole of the building to be altered be brought into compliance with the requirements of this Part.

Conditions of granting exemption under sub-regulation (2)

(3) An exemption under sub-regulation (2) shall not be granted by the Building Controller in relation to a building except -

- (a) in the particular case;
- (b) having regard to the purposes for which the building is intended or adapted to be used; and
- (c) having regard to the recommendations, if any, included in the certificate second-mentioned in that sub-regulation as to the conditions, if any, to be imposed on the exemption.

Application

(4) This regulation shall be read subject to regulation 1.6.

19.12 SPECIAL PROVISIONS FOR CERTAIN BUILDINGS

Application

(1) A reference in this regulation to a building is a reference to a Class V, VI, VII or VIII building -

- (a) more than 36,000 m² in total floor area; or
- (b) in relation to which the Building Controller is of the opinion that special provision should be made to restrict or combat the spread of fire.

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Reference to Director

(2) Subject to sub-regulation (3), the Building Controller shall refer the construction of a building to the Director for a report and, after consideration of the recommendations, if any, contained in that report, may impose such special requirements for restricting or combating the spread of fire in the building as he thinks fit.

Conditions in imposing special requirements

(3) A special requirement under sub-regulation (2) shall not be imposed by the Building Controller on a building except -

- (a) in the particular case;
- (b) having regard to the purposes for which the building is intended or adapted to be used; and
- (c) in addition to the requirements of this Part applicable to the building other than such of those requirements for which an exemption has been granted under this Part in relation to the building.

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PART 20 - FIRE-RESISTANCES OF STRUCTURAL MEMBERS

20.1 METHOD OF ESTABLISHMENT OF FIRE-RESISTANCE RATING

Subject to regulations 20.3, 20.4 and 20.5, where a structural member of a building is required to have a fire-resistance rating, the structural member shall -

- (a) have the fire-resistance rating applicable under regulation 20.9 to it; or
- (b) be identical with a prototype that has been subjected to -
 - (i) the standard fire test; or
 - (ii) a test that is like the standard fire test, and is shown by documentary evidence, in accordance with regulation 20.2, to have the required fire-resistance rating.

20.2 EVIDENCE OF FIRE-RESISTANCE RATING

Conditions of acceptance of documentary evidence

(1) Where documentary evidence submitted in accordance with regulation 10.3 to the Building Controller indicates that the prototype subjected to the test referred to in regulation 20.1(b)(ii) to which the documentary evidence relates was subjected to restraints applied by direct compression, or compression forces developed as a result of the inability of the prototype to expand thermally because of the nature of its supports and its position during the test, the documentary evidence shall -

- (a) where the prototype was a deck or floor, or a structural member to be incorporated in a deck or floor - not be acceptable for the purposes of this Part; and
- (b) where the prototype was a steel beam, open-web joist or column or the like - not be accepted for the purposes of this Part unless it certifies that, during the test, the temperature of the steel in the prototype -
 - (i) averaged not more than 538°C; and
 - (ii) was not at any time more than 649°C.

Submission of documentary evidence to Building Controller

(2) A copy of documentary evidence referred to in sub-regulation (1) shall be submitted to the Building Controller by the person for whom the building which incorporates the structural member to which the

documentary evidence relates is constructed unless the Building Controller waives this requirement because a copy of the documentary evidence is already in his possession.

20.3 VARIATION IN SPAN OF CERTAIN STRUCTURAL MEMBERS

Conditions of acceptance of variation in span

(1) Where a structural member referred to in regulation 20.1 is a floor, roof or beam of steel or reinforced concrete, other than prestressed concrete, it may be of longer or shorter span than that of its prototype referred to in regulation 20.1(b) where evidence satisfactory to the Building Controller shows that -

- (a) the calculated stresses at the centre of the span of the structural member under the total dead and live load are not more than those in the centre of the span of the prototype, as shown in the documentary evidence which relates to the test referred to in regulation 20.1(b) to which the prototype was subjected;
- (b) the calculated tensile stress in steel in the structural member is not, at the centre of the span under the total dead and live load, more than -
 - (i) 100% of the design tensile stress in the steel, referred to in the report referred to in paragraph (a), where the average temperature of the steel, as determined in accordance with the standard fire test, is not more than 538°C;
 - (ii) 70% of the stress referred to in sub-paragraph (i), where the average temperature of the steel, as determined in accordance with the standard fire test, is not less than 593°C; or
 - (iii) not less than 70% and not more than 100% of the stress referred to in sub-paragraph (i), on a proportionally interpolated basis, where the average temperature of the steel, as determined in accordance with the standard fire test, is not less than 538°C and not more than 593°C;
- (c) where the prototype contained a feature which produced a negative bending moment during the test referred to in regulation 20.1(b) to which it was subjected - the feature is repeated in the structural member; and

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- (d) where a condition of horizontal restraint was introduced during the test referred to in regulation 20(1)(b) to which the prototype was subjected - the structural member is designed to compensate for that condition.

Certain matters may be taken into account in calculations

(2) For the purposes of sub-regulation (1), a negative bending moment, if any, at either end of a span of structural member referred to in that sub-regulation, where in addition to a negative bending moment referred to in the report issued in relation to the test referred to in regulation 20.1(b) to which the structural member's prototype was subjected, may be taken into account in the calculations referred to in that sub-regulation, but shall not relieve the central bending moment by more than one-tenth of the central bending movement, and 2 such negative bending moments, one at each end of the span, may be so taken into account in those calculations but collectively shall not relieve the central bending moment by more than one-fifth of the central bending movement.

Variation permitted to method of restraint

(3) A method of restraint of a structural member may differ from that of its prototype referred to in regulation 20.1(b) where calculations in accordance with this regulation are submitted to the Building Controller and approved.

Evidence and calculations by practising structural engineer

(4) The evidence and calculations referred to in this regulation shall be in the form of a report by a practising structural engineer.

20.4 VARIATIONS IN COLUMNS

A structural member referred to in regulation 20.1 which is a steel column may vary from the size of its prototype referred to in that regulation where its -

- (a) cross-sectional profile is, in the opinion of the Building Controller, like that of the prototype; and
- (b) slenderness ratio, and ratio of surface area to mass per unit of length, are not more than those of the prototype.

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20.5 MINOR VARIATIONS FROM PROTOTYPE

Building Controller may approve variations

(1) Where a structural member required to have a fire-resistance rating -

- (a) does not have the fire-resistance rating applicable under regulation 20.9 to it; and
- (b) departs, in the opinion of the Building Controller, in some minor degree from its prototype referred to in regulation 20.1(b), but in a manner other than that referred to in regulation 20.3 or 20.4,

its use may be approved upon production of a report in accordance with sub-regulation (2).

Reports from specified authorities

(2) For the purposes of sub-regulation (1), the Building Controller may accept a report in relation to a structural member referred to in that sub-regulation from -

- (a) a testing authority registered with the National Association of Testing Authorities, Australia, certifying in the form authorized by that Association that the material incorporated in the structural member has physical and chemical properties that are identical with those of the materials -
 - (i) incorporated in a prototype referred to in regulation 20.1(b) that has achieved the required fire-resistance rating; and
 - (ii) described in the documentary evidence issued in relation to the test referred to in regulation 20.1(b) to which the prototype referred to in sub-paragraph (i) was subjected; or
- (b) an authority referred to in regulation 10.3(3) -
 - (i) certifying that, in the opinion of the authority, the structural member would, despite its minor departures from its prototype referred to in regulation 20.1(b), be capable of achieving the required fire-resistance rating if subjected to the standard fire test; and
 - (ii) giving details of materials, construction and methods of restraint or support which must be complied with in order to achieve the required fire-resistance rating.

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20.6 CERTAIN MATERIALS INTERCHANGEABLE

Certain materials used in concrete and plaster

(1) A fire-resistance rating achieved where using a material of -

- (a) Group A - Portland cement;
- (b) Group B - lime;
- (c) Group C - dense sand;
- (d) Group D - dense, calcareous aggregate, including limestone or calcareous gravel; or
- (e) Group E - dense siliceous aggregate, including basalt, diorite, dolorite, granite, grano-diorite and trachyte,

as an ingredient in concrete or plaster, shall apply equally where a material, if any, of the same group is used in the same proportions in concrete or plaster.

Perlite and vermiculite

(2) A fire-resistance rating achieved where using gypsum-perlite plaster or gypsum-vermiculite plaster shall apply equally for both gypsum-perlite and gypsum-vermiculite plasters.

20.7 CERTAIN MATERIALS TO MEET SPECIAL REQUIREMENTS

Application

(1) Where a structural member is required to have a fire-resistance rating and it incorporates a material referred to in this regulation, the use of the material shall be subject to such of the requirements specified in this regulation as are applicable to it.

Bricks and certain blocks

(2) A brick, terra-cotta block and concrete block shall be laid in cement or composition mortar which complies with the requirements of Part 28 applicable to it.

Gypsum blocks

(3) A gypsum block shall be laid in gypsum-sand or lime mortar.

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Gypsum-sand mortar and plaster

(4) Gypsum-sand mortar and gypsum-sand plaster shall consist of -

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

Plaster of cement and sand or cement, lime and sand

(5) Plaster specified in Table 20.9(3) shall -

- (a) consist of -
 - (i) cement and sand; or
 - (ii) cement, lime and sand; and
- (b) not be finished except with gypsum, gypsum-sand, gypsum-perlite, gypsum-vermiculite plaster or lime putty.

Gypsum-perlite and gypsum-vermiculite plaster

(6) Gypsum-perlite or gypsum-vermiculite plaster specified in Table 20.9(3) shall have a thickness not less than that specified in the table for it and shall -

- (a) where not more than 25 mm in thickness is required - be applied in either one or 2 coats, each consisting of material in the proportion of 1 m³ of perlite or vermiculite to 640 kg of gypsum; and
- (b) where more than 25 mm in thickness is required - be applied in 2 coats, the first of which shall consist of material in the proportion of 1 m³ of perlite or vermiculite to 800 kg of gypsum and the second of which shall consist of material in the proportion of 1 m³ of perlite or vermiculite to 530 kg of gypsum.

Gypsum for plaster or mortar

(7) In this Part, "gypsum", in relation to a plaster mix or mortar, means plaster of Paris or a like material derived from gypsum and used as an ingredient in plaster or mortar.

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Reinforcement for plaster

(8) Where expanded metal lath is required as a reinforcement for plaster, or as a base for plaster or sprayed application, it shall -

- (a) have a mass per unit area of not less than 1.84 kg/m^2 ;
- (b) have not less than 98 meshes/m; and
- (c) be protected against corrosion by galvanizing or other approved method.

Plaster reinforcement

(9) Where plaster used as a fire-resisting material for a wall is more than 19 mm in thickness, the plaster shall be reinforced with -

- (a) expanded metal lath which complies with sub-regulation (8); or
- (b) 13 mm x 13 mm x 0.710 mm galvanized steel wire mesh,

the reinforcement being securely fixed to the wall and positioned at a distance from the face of the wall of not less than one-third of the total thickness of the plaster.

20.8 COLUMN COVERINGS

Protection against injury

(1) Where a steel column required to have a fire-resisting covering is -

- (a) of lightweight construction; and
- (b) liable to damage from the movement of vehicles, materials or equipment, or any likely cause,

the fire-resisting covering shall be protected by metal or other approved material.

Protection against indenting of lightweight constructions

(2) Where the fire-resisting covering referred to in sub-regulation (1) is not in continuous contact with the steel column which it covers, the voids between the covering and the column shall be filled solid, with an approved non-combustible material, to not less than 1.2 m in height above the floor on which the column is situated.

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Sealing at floor level in certain lightweight constructions

(3) Where a steel column referred to in sub-regulation (1) -

- (a) extends through 2 or more storeys; and
- (b) has its fire-resisting covering not in continuous contact with it,

a plug of approved fire-resisting material shall be inserted at each floor to seal all voids at those floor levels, including the voids between the column and its fire-resisting covering.

20.9 CERTAIN STRUCTURAL MEMBERS TO HAVE SPECIFIC FIRE-RESISTANCE RATINGS

Reinforced concrete

(1) A structural member of reinforced concrete in which -

- (a) the cross-sectional dimensions of the member are not less than those given in Appendix B to AS 1480 (in accordance, where applicable, with the loads to be supported by the member); and
- (b) the types and thicknesses of the fire-resisting concrete or other material used in the member are in accordance with those given in the appendix referred to in paragraph (a),

shall, for the purposes of this Code, have the relevant fire-resistance rating set out in the appendix referred to in paragraph (a).

Prestressed concrete

(2) A structural member of prestressed concrete in which -

- (a) the cross-sectional dimensions of the member are not less than those given in AS 1481 (in accordance, where applicable, with the loads to be supported by the member); and
- (b) the types and thicknesses of the fire-resisting concrete or other material used in the member are in accordance with those given in the Australian Standard referred to in paragraph (a),

shall, for the purposes of this Code, have the relevant fire-resistance rating set out in the Australian Standard referred to in paragraph (a).

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Table of fire-resistance ratings to apply to certain structural members

(3) A structural member specified in column 1 of Table 20.9(3) in which the construction incorporates a material, or combination of materials, specified in column 2 of the table opposite the member so specified, shall have the fire-resistance rating specified at the head of column 3, 4, 5, 6 or 7, as the case may be, of the table where -

- (a) the principal material has the thickness, if any, specified in column 3, 4, 5, 6 or 7, as the case may be, of the table opposite the member so specified;
- (b) the construction meets the conditions or requirements set out in the numbered clauses, if any, specified in column 8 of the table opposite the member so specified and included in Specification No. 20.9(3); and
- (c) the construction otherwise complies with the requirements of this Code applicable to it.

TABLE 20.9(3)

FIRE-RESISTANCE RATINGS TO APPLY TO CERTAIN
STRUCTURAL MEMBERS

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)			Specification No. 20.9(3) reference - clause number		
		1 hr	1½ hr	2 hr	3 hr	4 hr	
Loadbearing wall, whether internal or external	<u>Single leaf wall</u> -						
	Clay bricks -						
	Unplastered	90	110		230		3,4,21
	Plastered 19 mm in thickness on both sides		90	110			3,4,6,21

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)			Specification No. 20.9(3) reference - clause number		
		1 hr	1½ hr	2 hr	3 hr	4 hr	
	Solid concrete bricks and solid concrete blocks		125	150	175	190	4, 21
	Concrete -						
	Unreinforced				175	200	21
	Reinforced	Refer to regulation 20.9(1)					
	Prestressed	Refer to regulation 20.9(2)					
	Ashlar stone masonry					300	1,21
	<u>Cavity wall (excluding the width of the cavity)</u>						
	Clay bricks					220	3,4,19, 20,21
	Solid concrete bricks and solid concrete blocks			180		200	4,19,20, 21
	Ashlar stone masonry					300	1,19,20, 21

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)				Specification No. 20.9(3) reference - clause number	
		1 hr	1½ hr	2 hr	3 hr	4 hr	
Non-load - bearing wall whether internal or external	<u>Single-leaf wall</u>						
	Clay bricks -						
	Unplastered	90	110	130	160	190	3,4,21
	Plastered 19 mm in thickness on both sides		90	110	140		3,4,6,21
	Solid concrete bricks and concrete blocks with -						
	Category A aggregate		90	100	120	140	8,21
	Category B aggregate	90	95	110	135	160	8,21
	Category C aggregate	90	100	120	150	175	8,21
	Hollow blocks of concrete with -						
	Category A aggregate	66	83	96	119	142	7,8,21
	Category B aggregate	73	93	109	134	157	7,8,21
	Category C aggregate	82	101	121	149	172	7,8,21
	Concrete -						
	Unreinforced				175	200	21

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)				Specification No. 20.9(3) reference clause number	
		1 hr	1½ hr	2 hr	3 hr	4 hr	
	No-fines, plastered 19 mm in thickness on both sides				150		6,21
	Reinforced	Refer to regulation 20.9(1)					
	Prestressed	Refer to regulation 20.9(2)					
	Calcium silicate bricks -						
	Unplastered	90	110	125	145	165	3,4,21
	Plastered 19 mm in thickness on both sides			110			3,4,6,21
	Terra-cotta -						
	Plastered 19 mm in thickness on one side	150					4,6,9,21
	Plastered 19 mm in thickness on both sides	100	150				4,6,9,21
	Solid gypsum blocks	75	88	100	110	127	4,21
	Gypsum-perlite or gypsum-vermiculite plaster on metal lath and channel		51	63			10,21
	Ashlar stone masonry					300	1,21

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)				Specification No. 20.9(3) reference - clause number	
		1 hr	1½ hr	2 hr	3 hr	4 hr	
	<u>Cavity walls (excluding the width of the cavity)</u>						
	Clay bricks					180	3,4,20, 21
	Solid concrete bricks and solid concrete blocks with -						
	Category A aggregate					152	4,8,20, 21
	Category B aggregate					160	4,8,20, 21
	Category C aggregate				152	175	4,8,20, 21
	Hollow concrete bricks and hollow concrete blocks with -						
	Category A aggregate			110	119	142	7,8,20, 21
	Category B aggregate			110	134	157	7,8,20, 21
	Category C aggregate		110	121	149	172	7,8,20, 21

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)			Specification No. 20.9(3) reference - clause number		
		1 hr	1½ hr	2 hr	3 hr	4 hr	
	Calcium silicate bricks					180	3,4,20, 21
	One leaf of clay bricks and one leaf of either concrete bricks or blocks or calcium silicate bricks					200	3,4,5,21
	Ashlar stone masonry					300	1,21
Steel columns including a fabricated column	<u>Column incorporated in, or in contact on, one or more sides with solid masonry or concrete wall not less than 100 mm in thickness, with fire protection of -</u> Solid clay bricks with - Column spaces filled Column spaces not filled						
	Column spaces filled	50	50	50	50	63	4,11,12
	Column spaces not filled	50	50	50			4,11

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)			Specification No. 20.9(3) reference - clause number		
		1 hr	1½ hr	2 hr	3 hr	4 hr	
	Solid concrete blocks with -						
	Column spaces filled	50	50	50	63	88	4,11,12
	Column spaces not filled	50	50	63			4,11
	Gypsum blocks laid in gypsum-sand mortar with -						
	Column spaces filled			50	63	88	4,11,12
	Column spaces not filled			50			4,11
	Hollow terra-cotta blocks plastered 13 mm in thickness with -						
	Column spaces filled			50	63	88	4,9,11,12
	Column spaces not filled			50			4,9,11

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)				Specification No. 20.9(3) reference - clause number	
		1 hr	1½ hr	2 hr	3 hr	4 hr	
	Structural concrete cast <i>in-situ</i> around mesh or binding and non-load-bearing	25	32	38	51	63	11,12,13
	Plastered 13 mm in thickness		25	32	38	51	6,11,12,13
	Structural concrete cast <i>in-situ</i> around mesh or binding and designed to be loadbearing and incorporating -						
	Category A aggregate	25	32	38	51	63	8,11,12,13
	Category B or C aggregate	25	32	38	57	76	8,11,12,13
	Gypsum cast <i>in-situ</i>					48	

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)				Specification No. 20.9(3) reference - clause number	
		1 hr	1½ hr	2 hr	3 hr	4 hr	
	Gypsum-perlite or gypsum-vermiculite plaster -						
	Sprayed on metal lath	19	22	25	35	44	14,15
	Sprayed to contour	22	25	35	48	57	18
	<u>Columns not incorporated in, or in direct contact with, solid masonry or concrete wall not less than 100 mm in thickness, with fire-resisting protection of -</u>						
	Solid clay bricks with -						
	Column spaces filled	50	50	50	63	75	4,11,12
	Column spaces not filled	50	50	63			4,11
	Solid concrete blocks with -						
	Column spaces filled	50	50	50	75	100	4,11,12

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)				Specification No. 20.9(3) reference - clause number	
		1 hr	1½ hr	2 hr	3 hr	4 hr	
	Column spaces not filled	50	50	63			4,11
	Gypsum blocks laid in gypsum-sand mortar with -						
	Column spaces filled			50	75	100	4,11,12
	Column spaces not filled			50			4,11
	Hollow terra-cotta blocks plastered 13 mm in thickness with -						
	Column spaces filled			50	75	100	4,9,11,12
	Column spaces not filled			50			4,9,11
	Structural concrete cast <i>in-situ</i> around mesh or binding and not subjected to any applied loading	25	32	38	51	63	11,12,13

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)				Specification No. 20.9(3) reference - clause number	
		1 hr	1½ hr	2 hr	3 hr	4 hr	
	Plastered 13 mm in thickness		25	32	38	51	6,11,12, 13
	Structural concrete cast <i>in-situ</i> around mesh or binding and designed to be loadbearing and incorporating -						
	Category A aggregate	25	32	38	51	70	8,11,12, 13
	Category B or C aggregate	25	38	44	63	89	8,11,12, 13
	Gypsum cast <i>in-situ</i>					51	
	Gypsum-perlite or gypsum-vermiculite plaster -						
	Sprayed on metal lath	19	22	29	38	48	14,15
	Sprayed to contour	25	32	41	54	63	

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)			Specification No. 20.9(3) reference - clause number		
		1 hr	1½ hr	2 hr	3 hr	4 hr	
Concrete column	Columns of -						
	Reinforced concrete	Refer to regulation 20.9(1)					
	Prestressed concrete	Refer to regulation 20.9(2)					
Steel beam including open-webbed joist, girder, truss and the like	Beams, open-webbed joist, girder, truss and the like in direct contact with solid reinforced concrete slab or hollow-block floor or roof construction, with fire-resisting protection of -						
	Structural concrete encasement incorporating -						
	Category A aggregate	25	25	32	44	57	8,16
	Category B or C aggregate	25	32	38	51	63	8,16

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)				Specification No. 20.9(3) reference - clause number	
		1 hr	1½ hr	2 hr	3 hr	4 hr	
	Gypsum-perlite, or gypsum-vermiculite plaster -						
	Sprayed on metal lath	19	22	25	35	44	15,17
	Sprayed to contour	22	25	35	48	57	18
	<u>Beam, open-webbed joist, girder, truss and the like not in direct contact with solid reinforced concrete slab or hollow-block floor or roof construction with fire-resisting protection of -</u>						
	Structural concrete encasement incorporating -						
	Category A aggregate	25	32	38	51	70	8,16
	Category B or C aggregate	25	38	44	63	89	8,16

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TABLE 20.9(3) - continued

Column							
1	2	3	4	5	6	7	8
Structural member	Construction of member	Thickness of principal material (mm)				Specification No. 20.9(3) reference - clause number	
		1 hr	1½ hr	2 hr	3 hr	4 hr	
	Gypsum-perlite or gypsum-vermiculite plaster -						
	Sprayed on metal lath	19	22	29	38	48	15,17
	Sprayed to contour	25	32	41	54	63	18
Floor, roof and ceiling	Concrete -						
	Reinforced	Refer to regulation 20.9(1)					
	Prestressed	Refer to regulation 20.9(2)					

Note: A space in column 3, 4, 5, 6 or 7 of the table indicates that the structural member to which the space relates has not -

(a) achieved; or

(b) been tested to achieve,

the particular fire-resistance rating to which the space relates.

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SPECIFICATION No. 20.9(3)

1. ASHLAR STONE MASONRY

Ashlar stone masonry shall not be -

- (a) used in a part of a building which has a rise of more than 2 storeys; and
- (b) of -
 - (i) aplite, granite, granodiorite, quartz dacite, quartz diorite, quartz porphyrite or quartz porphyry;
 - (ii) conglomerate, quartzite or sandstone;
 - (iii) chert or flint; or
 - (iv) limestone or marble.

2. STRESSES IN LOADBEARING MASONRY

Calculated compressive stresses in loadbearing masonry less than 150 mm in thickness shall be not more than 1.1 MPa, such calculations to be based on net areas of masonry units where the masonry units contain cores or like holes.

3. CORED OR LATTICE BRICKS

Cored or lattice bricks used shall have a net volume, exclusive of cored or like holes, of not less than 75% of their gross volume, measured on the overall rectangular shape of the bricks.

4. MANUFACTURING DIMENSIONS USED IN TABLE 20.9(3)

The thicknesses specified in Table 20.9(3) shall be manufacturing dimensions.

5. NON-LOADBEARING CAVITY WALL WHICH HAS ONE LEAF OF CLAY BRICKS AND ONE LEAF OF CONCRETE BRICKS, CONCRETE BLOCKS OR CALCIUM SILICATE BRICKS

A non-loadbearing cavity wall which has one leaf of clay bricks and one leaf of concrete bricks, concrete blocks or calcium silicate bricks shall be such that -

- (a) the leaf of clay bricks is not less than 110 mm in thickness and, where those bricks are cored or lattice bricks, have a net volume of not less than 75% of the gross volume;

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(b) the other leaf consists of -

- (i) concrete bricks not less than 90 mm in thickness and, where those bricks are cored bricks, have a net volume of not less than 75% of the gross volume;
- (ii) concrete blocks not less than 90 mm in thickness and, where those blocks are hollow blocks, be not less than 68 mm in equivalent thickness; or
- (iii) calcium silicate bricks not less than 90 mm in thickness and, where those bricks are cored bricks, have a net volume of not less than 75% of the gross volume;

(c) the leaves are tied in accordance with AS 1640, except that the wire ties shall be dual limb type not less than 4 mm in diameter; and

(d) the cavity is not less than 40 mm in width and not more than 80 mm in width.

6. CERTAIN TABULATED THICKNESSES EXCLUDE PLASTER

The thickness of plastering used shall be in addition to the thickness specified in Table 20.9(3) of the principal material.

7. THICKNESS OF HOLLOW CONCRETE BLOCKS

Calculation of thickness of hollow concrete blocks

(1) Subject to sub-clause (2), the thickness specified in Table 20.9(3) of a hollow concrete block shall be calculated by taking the total actual volume of the block, subtracting the volume of all core holes in the block, and dividing the resultant figure by the actual area of one vertical exposed face of the block.

Calculation of thickness of plastered hollow concrete blocks

(2) Where a block referred to in sub-clause (1) is plastered, the thickness under that sub-clause of the block may be increased by the amount shown in Table 7.2.

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TABLE 7.2

INCREASE OF THE EQUIVALENT THICKNESS FOR WALLS OF
CONCRETE BLOCKS BY APPLICATION OF PLASTER

Type of aggregate used in manufacture of blocks (see clause 8)	Type of plaster and its situation		
	Cement and sand, or cement, lime and sand on one face only	Cement and sand, or cement, lime and sand on both faces	Gypsum, or gypsum-perlite or gypsum-vermiculite on one or both faces
Category A aggregate	No concession shall be made	Equivalent thickness of concrete block without plaster	Equivalent thickness of concrete block without plaster
		<u>plus</u>	<u>plus</u>
		25% of total thickness of plaster	total thickness of plaster
Category B aggregate	No concession shall be made	Equivalent thickness of concrete block without plaster	Equivalent thickness of concrete block without plaster
		<u>plus</u>	<u>plus</u>
		35% of total thickness of plaster	1.1 times the total thickness of plaster
Category C aggregate	No concession shall be made	Equivalent thickness of concrete block without plaster	Equivalent thickness of concrete block without plaster
		<u>plus</u>	<u>plus</u>
		50% of total thickness of plaster	1.25 times the total thickness of plaster

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8. AGGREGATES FOR CONCRETE AND CONCRETE BLOCKS

Category A aggregate

(1) Category A aggregate shall -

(a) consist of particles with a uniformly porous and cellular structure;

(b) be -

(i) material prepared by expanding, calcining or sintering such materials as clay, shale, slate, diatomaceous shale, perlite, vermiculite or obsidian;

(ii) expanded blast-furnace slag produced by treating molten blast-furnace slag with water; or

(iii) material from natural deposits of frothed types of lava, such as pumices and scorias, being porous volcanic-glass formations, friable in character and predominantly light grey for pumice and dark grey for scoria; and

(c) where it is not pumice or scoria - contain not more than 65% by weight of silica as determined by an approved chemical analysis.

Category B aggregate

(2) Category B aggregate shall be -

(a) coal or coke cinders;

(b) scorias other than scorias referred to in sub-clause (1)(b)(iii); or

(c) unexpanded blast-furnace slag.

Category C aggregate

(3) Category C aggregate shall -

(a) comply with AS 1465;

(b) be -

(i) calcareous material;

(ii) river gravel, granite, feldspar, dolerite, diorite or basalt; or

(iii) greywacke or sandstone; and

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- (c) contain not more than 65% by mass of silica as determined by an approved chemical analysis.

Fine aggregate

- (4) Fine aggregate shall -
 - (a) where Category A aggregates are used - be of the same material as is used for the coarse aggregate or, where silicious sand is used, have an amount of not more than 20% of the total mass of all fine and coarse aggregates; and
 - (b) where it is lightweight fine aggregate - have a density where dry and loose of not more than 1,120 kg/m³.

9. HOLLOW TERRA-COTTA CONSTRUCTION

The volume of cored holes in a block shall be not more than -

- (a) in a block 75 mm in thickness - 35% of the gross volume of the block;
- (b) in a block 100 mm in thickness - 40% of the gross volume of the block; or
- (c) in a block 150 mm in thickness - 50% of the gross volume of the block.

10. GYPSUM-PERLITE OR GYPSUM-VERMICULITE PLASTER IN WALLS

The gypsum-perlite or gypsum-vermiculite plaster used shall be applied to each exposed side of steel expanded metal lath, the lath being securely wired to 19 mm x 0.44 kg/m steel channels used as studs and spaced at not more than 380 mm centres.

11. PROTECTION OF CERTAIN STEEL COLUMNS

Measurement of certain thicknesses

(1) Subject to sub-clause (2), where the principal fire-resisting construction of a steel column or pipe column, including a fabricated column, is brickwork, blockwork, concrete or like hard construction placed against the steel, the thickness specified for the material of that construction shall be the thickness measured from the face of the steel, or from the outer part of a rivet or bolt, whichever is the nearer to the outside of the fire-resisting construction.

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Concessions for measurement of certain thicknesses

(2) For the purposes of a construction referred to in sub-clause (1), other than terra-cotta blockwork -

- (a) where the construction is not less than 38 mm in thickness - the measurement referred to in that sub-clause may be made disregarding rivet heads;
- (b) where the construction is not less than 50 mm in thickness - the measurement referred to in that sub-clause may be made disregarding any part of a bolt that is not a high-tensile bolt;
- (c) where the construction is not less than 50 mm in thickness - a splice which has no part situated in that part of the column that begins 915 mm in height above the level of a floor, and terminating at the underside of the floor or roof immediately above, may encroach upon that thickness by not more than one-quarter of that thickness; and
- (d) where the construction is in a column required to have a fire-resistance rating of not less than 4 hours - the edge of a flange not more than 38 mm in thickness, measured inclusive of a splice plate, if any, that projects more than 63 mm beyond a web may encroach by not more than 12 mm upon the overall thickness.

Reinforcement of bricks, &c.

(3) Bricks and concrete blocks shall have steel wire or mesh reinforcement laid in alternate courses, lapped at corners, and gypsum blocks and hollow terra-cotta blocks shall be likewise reinforced in each horizontal joint.

12. RE-ENTRANT AND LIKE PARTS OF CERTAIN STEEL COLUMNS

Where a steel column, including a fabricated column, is required to have a fire-resistance rating of not less than 3 hours, re-entrant parts and parts, if any, between the required fire-resisting material and the steel shall be filled with concrete or other hard fire-resisting material.

13. REINFORCEMENT OF FIRE-RESISTING CONCRETE

A steel wire mesh or binding shall be placed approximately 20 mm from the outer surface of the fire-resisting concrete used, and the mesh or binding shall include wires -

- (a) not less than 3.15 mm in diameter; and
- (b) spaced at not more than 100 mm centres vertically,

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except that, where the concrete is not less than 50 mm in thickness, wires not less than 5 mm in diameter and spaced at not more than 150 mm centres vertically may be used instead.

14. COLUMN PROTECTION OF GYPSUM-PERLITE OR GYPSUM-VERMICULITE PLASTER ON METAL LATH

For the purposes of column protection of gypsum-perlite or gypsum-vermiculite plaster on metal lath as specified in Table 20.9(3) -

- (a) the plaster shall be applied to the lath; and
- (b) the lath shall be of -

- (i) steel expanded metal -

- (A) where the plaster is not less than 35 mm in thickness - not less than 12 mm from the column; and

- (B) in any other case - not less than 6 mm from the column,

- and fixed at not more than 610 mm centres vertically to steel furring channels; or

- (ii) self-furring steel expanded metal with furring dimples to hold it not less than 10 mm from the column.

15. MATERIAL SPRAYED ON METAL LATH

The metal lath shall be steel expanded metal lath and the thickness of the sprayed material shall be measured from the back of the lath.

16. PROTECTION OF STEEL OPEN-WEBBED JOISTS, BEAMS, GIRDERS, TRUSSES AND THE LIKE

Where the principal fire-resisting material of a steel open-webbed joist, beam, girder, truss or the like is structural concrete encasement -

- (a) the thickness of such encasement specified in Table 20.9(3) shall be the minimum thickness measured from the face of the steel, or from the outer part of a rivet or bolt, whichever is the nearer to the outside of the encasement, except that -

- (i) where the encasement is not less than 38 mm in thickness - the measurement may be made disregarding any rivet heads; and

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- (ii) where the encasement is not less than 50 mm in thickness - the measurement may be made disregarding any part of a bolt that is not a high-tensile bolt;
 - (b) a steel wire mesh or binding shall be placed in the encasement approximately 20 mm from the outer surface of the encasement, and the mesh or binding shall include wires -
 - (i) not less than 3.15 mm in diameter; and
 - (ii) spaced at not more than 100 mm centres horizontally, except that, where the concrete is not less than 50 mm in thickness, wires not less than 5 mm in diameter and spaced at not more than 150 mm centres horizontally may be used instead; and
 - (c) where the encasement, being on the soffit of an open-webbed joist, beam, girder, truss or the like is less than 38 mm in thickness plus one-twelfth the width of that soffit, it shall be mechanically vibrated into position.
17. GYPSUM-PERLITE PLASTER OR GYPSUM-VERMICULITE PLASTER AS PROTECTION FOR JOISTS, BEAMS, GIRDERS, TRUSSES AND THE LIKE
- Where protection is applied to a steel open-webbed joist, beam, girder, truss or the like, the lath shall be spaced not less than 20 mm from the steel, using steel furring channels at not more than 610 mm centres.
18. GYPSUM-PERLITE PLASTER OR GYPSUM-VERMICULITE PLASTER SPRAYED TO CONTOUR

Reinforcement of member

- (1) Reinforcement shall be used where a member or a part of a member to be protected falls within the limits of Table 18(1).

Type of reinforcement

- (2) For the purposes of Table 18(1), reinforcement shall be in -
- (a) expanded metal lath which complies with regulation 20.7(8); or
 - (b) 13 mm x 13 mm x 0.710 mm galvanized steel wire mesh,

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the reinforcement being placed at a distance from the face of the plaster of not less than one-third of the thickness of the plaster.

Reinforcement to be permanently fixed

(3) Reinforcement shall be permanently fixed in accordance with the requirements of Table 18(1) applicable to it.

TABLE 18(1)

SITUATION OF REINFORCEMENT AND ITS FIXING

Member or part of member to be protected	Reinforcement required where surface of member or part is more than - (mm)	Spacing for fixing of mesh to base material (mm centres)
'H' or 'I' section shapes -		
Vertical	450	450
Non-vertical	300	300
Underside	300	300
Upper side of horizontal	Not required	
Other shapes -		
Vertical	Any size	450
Non-vertical	Any size	300
Underside	Any size	300
Upper side of horizontal	Not required	

Note: For the purposes of this table -

"horizontal", in relation to a member or part of a member, means a member or part of a member the angle of which to the true horizontal is not more than 10°, and includes a member or part of a member designated "horizontal";

"underside", in relation to a member or part of a member, includes those surfaces of a member or part of a member designated "underside";

"vertical", in relation to a member or part of a member, means a member or part of a member the angle of which to the true vertical is not more than 10°, and includes a member or part of a member designated "vertical".

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19. LOADBEARING CAVITY WALL

For the purposes of this Part, a cavity wall shall be loadbearing where -

- (a) either leaf of the wall is required to support a vertical load in addition to its own weight; or
- (b) both leaves of the wall are intended to support a vertical load in addition to their own weight.

20. THICKNESS OF LEAVES IN CAVITY WALL

The leaves of a cavity wall are not required to have the same thickness but, in any case, each leaf shall be not less than -

- (a) in the case of a loadbearing wall - 90 mm in thickness; and
- (b) in the case of a non-loadbearing wall - 76 mm in thickness.

21. HEIGHT OF MASONRY WALL

Ratio of height to thickness of masonry wall

(1) The ratio of the effective height of a masonry wall, calculated in accordance with sub-clause (2), to the effective thickness of the wall, calculated in accordance with sub-clause (3), shall be not more than -

- (a) in the case of a loadbearing wall - 20; or
- (b) in the case of a non-loadbearing wall - 27.

Determination of height of masonry wall

(2) For the purposes of sub-clause (1), the effective height of a masonry wall shall be determined in accordance with AS 1640, except that the actual height of the wall to be used in calculating the effective height of the wall shall be the distance between the bearing surfaces providing adequate lateral support as specified in that Australian Standard.

Determination of thickness of masonry wall

(3) For the purposes of sub-clause (1), the effective thickness of a masonry wall shall be determined in accordance with AS 1640, except that the stiffening effect of -

- (a) an engaged pier, buttress or intersecting wall;

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- (b) thickness greater than the minimum thickness in a wall of non-uniform thickness such as a tapered or stepped wall; or

- (c) any plaster,

shall not be taken into account.

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PART 21 - CONSTRUCTION OF FIRE DOORS, SMOKE DOORS, FIRE WINDOWS AND FIRE SHUTTERS

21.1 FIRE DOORS

Subject to regulation 21.2, a fire door shall -

- (a) comprise a complete doorset as described in AS 1905 Part 1;
- (b) comply with the requirements of the Australian Standard referred to in paragraph (a); and
- (c) subject to the variations permissible under the Australian Standard referred to in paragraph (a), be identical in construction with a prototype which -
 - (i) has, in the standard fire test, achieved the required fire-resistance rating; and
 - (ii) during the first 30 minutes after the commencement of the standard fire test to which it was subjected, have a rise in temperature on the side remote from the heat source of the test of not more than 140°C, except in a glazed part, if any, of the fire door.

21.2 GLAZING IN FIRE DOORS

A fire door shall not incorporate -

- (a) where it protects an opening in a fire wall-glazing; and
- (b) in any other case - glazing the dimensions of which are more than $64.6 \times 10^3 \text{ mm}^2$.

21.3 SMOKE DOORS

A smoke door shall -

- (a) comprise one door leaf or 2 door leaves;
- (b) be side-hung; and
- (c) inhibit the penetration of smoke, at every part, through the doorway to which it is fitted.

21.4 FIRE WINDOWS

A fire window shall be -

(a) a window that is -

- (i) identical in construction with a prototype of the window that has been subjected to the standard fire test and, in that test, has demonstrated its ability, for not less than the required period, to prevent the spread of flames and hot gases through the window opening;
- (ii) installed in the same manner as the prototype referred to in sub-paragraph (i); and
- (iii) not used in an opening that is more in height or width than the opening in which the prototype referred to in sub-paragraph (i) was tested under the standard fire test;

(b) a window of wired glass in framing of galvanized steel, the maximum dimensions, construction and installation of which complies with Specification No. 21.4(b); or

(c) a glass block window panel, the maximum dimensions, construction and installation of which complies with Specification No. 21.4(c).

21.5 FIRE SHUTTERS

A fire shutter shall be a shutter -

(a) that is -

- (i) identical with a prototype of the shutter that has been subjected to the standard fire test and, in that test, has demonstrated its ability, for not less than the period required by AS 1905 Part 2, to prevent the spread of fire through the opening for which it is provided;
- (ii) installed in the same manner as the prototype referred to in sub-paragraph (i); and
- (iii) not used in an opening that is more in height or width than the opening in which the prototype referred to in sub-paragraph (i) was tested under the standard fire test; or

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- (b) which comprises a curtain of interlocking steel slats, mounted on a barrel and sliding in steel guides, the maximum dimensions, construction and installation of which complies with the Australian Standard referred to in paragraph (a)(i).

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SPECIFICATION No. 21.4(b)

FIRE WINDOWS

1. APPLICATION

Unless the contrary intention appears, a reference in this Specification to a fire window is a reference to a window of wired glass, in framing of galvanized steel, in a window opening required by Part 22 to be protected by a fire window with a fire-resistance rating of not less than one hour.

2. DIMENSIONS

Dimensions of openings for fire windows

(1) An opening in which a fire window is to be installed shall be not more than -

- (a) 5.2 m² in area; and
- (b) 2.95 m in height or width,

the measurements being taken between the jambs and between the sill and the lintel of the opening.

Dimensions of fire windows

(2) The dimensions of a fire window, measured over the outer frame, but excluding any part of an anchoring lug, shall be 12 mm less in both width and height than the inside dimensions of the opening in which it is installed.

3. MAKE-UP OF FIRE WINDOWS

A fire window shall comprise -

- (a) an outer frame and, in the case of a fire window which has an openable sash -
 - (i) a moveable frame as part of that sash; and
 - (ii) a supplementary frame, housing the moveable frame and held to a fixed position within the window;
- (b) glazing bars, where required under the requirements of this Specification on sizes of panes of glass, or to support a supplementary frame;
- (c) glazing beads; and
- (d) a pane or panes of glass -
 - (i) cut to size and shape;

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- (ii) situated within the frame or between the frame and glazing bars, if any;
- (iii) held, by glazing compound, by the glazing beads; and
- (iv) sealed at all edges by glazing compound.

4. OPENABLE SASHES

An openable sash shall not be incorporated in a fire window except where -

- (a) the sash is the only one in the window;
- (b) it is horizontally pivoted 5 mm in height above the level of its centre;
- (c) it is designed to close under its own weight, unassisted by any other agency; and
- (d) the dimensions of its frame are not more than -
 - (i) 1 m in width; and
 - (ii) 1.305 m in height.

5. MAKE-UP OF OPENABLE SASHES

An openable sash shall comprise -

- (a) the moveable frame together with its particular parts of the pivots;
- (b) glazing bars, where required under the requirements of this Specification on sizes of panes of glass;
- (c) glazing beads;
- (d) the particular parts of a latching mechanism and a hold-open device, each in accordance with this Specification, that are applicable to the moveable frame; and
- (e) a pane or panes of glass -
 - (i) cut to size and shape;
 - (ii) situated within the frame or between the frame and glazing bars, if any;
 - (iii) held, by glazing compound, by the glazing beads; and
 - (iv) sealed at all edges by glazing compound.

6. MAKE-UP OF SUPPLEMENTARY FRAMES

A supplementary frame shall comprise the frame together with its particular parts of the pivots and other mechanical devices.

7. MAXIMUM CLEAR SPANS OF PANES

A pane in a fire window shall be not more than -

(a) where the pane is in an openable sash - 610 mm in height or width; and

(b) in any other case - 760 mm in height or width,

the measurements being taken between the nearer edges of the supporting steel members.

8. GLASS

The glass in a pane in a fire window shall be -

(a) not less than 6 mm in thickness;

(b) not less than 17 kg/m² in mass; and

(c) reinforced, near the centre of its thickness, with steel wire not less than 0.45 mm in thickness and in a form which is -

(i) a square mesh, in which the wires are not more than 20 mm apart and are electrically welded at each intersection (known as "Georgian Wired");

(ii) a hexagonal mesh, in which the hexagon is not more than 23 mm in average width and the wires are intertwined in one direction at their intersections (known as "Hexagonal Wired"); or

(iii) a diamond mesh, in which the sides of the diamonds are not more than 20 mm in length and the wires are electrically welded at each intersection (known as "Diamond Wired").

9. STEEL

The frames, glazing bars, if any, and glazing beads of a fire window shall be of approximately uniform thickness and of solid rolled mild steel so that -

(a) in the outer frames, the steel is of modified T cross-section in which -

(i) the top of the T is off-centre by 4.7 mm;

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- (ii) the bottom of the T extends to one side to form a flange not less than 11 mm in width, parallel to the top of the T and off-centre in the same direction;
 - (iii) the T is 34.9 mm in height;
 - (iv) the top of the T is 33.3 mm in width; and
 - (v) the area of the T is such that the steel section is not less than 1.9 kg/m in nominal mass;
- (b) in moveable frames and supplementary frames, above the pivot points in each case, the steel is of modified L cross-section in which -
- (i) the top of the L extends to each side to form a flange 17.4 mm in width, parallel to the bottom of the L and widening the L by not less than 9.5 mm;
 - (ii) the L is 31.7 mm in height;
 - (iii) the bottom of the L is 23.8 mm in width; and
 - (iv) the area of the L is such that the steel section is not less than 2.3 kg/m in nominal mass;
- (c) in moveable frames and supplementary frames, below the pivot points in each case, the steel is of modified asymmetrical channel cross-section in which -
- (i) the top flange of the channel is 23.8 mm in width and the bottom flange is not less than 7.9 mm in width;
 - (ii) a secondary top flange extends 9.5 mm backwards from the back of the channel, 4.7 mm below the main top flange;
 - (iii) the channel is 31.7 mm in height; and
 - (iv) the area of the channel is such that the steel section is not less than 2.3 kg/m in nominal mass;
- (d) in glazing bars that are not in openable sashes, the steel is of T cross-section in which -
- (i) the T is 34.9 mm in height;
 - (ii) the top of the T is 22 mm in width; and

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- (iii) the area of the T is such that the steel section is not less than 1.6 kg/m in nominal mass;
- (e) in glazing bars that are in openable sashes, the steel is of T cross-section in which -
 - (i) the T is 26.9 mm in height;
 - (ii) the top of the T is 22 mm in width; and
 - (iii) the area of the T is such that the steel section is not less than 1.1 kg/m in nominal mass; and
- (f) in glazing beads, the steel has a 9.5 mm square cross-section.

10. FABRICATION OF STEEL

Steel shall be fabricated so that -

- (a) in all frames -
 - (i) the steel members are mitred and flash-butt-welded at all corners;
 - (ii) glazing bars, if any, are tenoned into mortises in the frame, the ends of the tenons being extended through the frame members and expanded and secured by pressure-weld riveting; and
 - (iii) all holes to be punched, drilled or drilled and counter-sunk, but not to be tapped, are run through;
- (b) in moveable frames and supplementary frames -
 - (i) the upper and the lower side members are flash-butt-welded at each pivot point, the meeting faces of the moveable and the supplementary frames being so aligned as to ensure their close fitting when in service; and
 - (ii) the frames are notched to receive the pivots;
- (c) where glazing bars intersect -
 - (i) one glazing bar is passed through a deformed mortise in the other; and
 - (ii) the 2 glazing bars are pressed together to reform the mortise and form a joint that tightly locks; and

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- (d) glazing beads are drilled and countersunk for their fixing screws.

11. GALVANIZING OF STEEL

All steel shall be galvanized by hot-dipping after fabrication.

12. PIVOTS

A pivot shall consist of 2 brass cups each not less than 3 mm in thickness, one working inside the other with -

- (a) the outer cup to be -

- (i) not more than 44.5 mm in inside diameter;
- (ii) not less than 9.5 mm in inside depth; and
- (iii) riveted to the supplementary frame; and

- (b) the inner cup to be -

- (i) not less than 12.5 mm in inside depth; and
- (ii) riveted to the moveable frame, the rivets being of cadmium-plated steel and not less than 2 per cup.

13. FIXING OF SUPPLEMENTARY FRAMES

A supplementary frame shall be fixed, within a fire window, to -

- (a) a glazing bar; or
- (b) a member of the outer frame,

by M6 galvanized or cadmium-plated screws along each edge, at points not more than 75 mm from a corner and, elsewhere, not more than 230 mm apart.

14. FIXING OF GLAZING BEADS

Glazing beads shall be fixed to frames and glazing bars by countersunk M5 galvanized or cadmium-plated screws, at points not more than 100 mm from an end and, elsewhere, not more than 400 mm apart.

15. GLAZING COMPOUND

A glazing compound used in relation to a fire window shall be a non-setting mastic that does not harden except at a surface exposed to the air.

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16. TOLERANCES OF SIZES OF PANES

After selvage is removed, each pane of a fire window shall fit the rebates of the supporting steel with a clearance of -

- (a) not less than 1.5 mm; and
- (b) not more than 2.5 mm,

at each such point on its perimeter.

17. LATCHING MECHANISM

The latching mechanism of a fire window shall -

- (a) be situated at the top of the openable sash for which it is provided;
- (b) incorporate latchbolts situated not more than 150 mm from each side of the mechanism;
- (c) have keeps that will engage the latchbolts by not less than 9.5 mm;
- (d) be self-latching in a manner that will ensure it will remain fully latched where there is a mechanical failure; and
- (e) be of stainless steel or nickel-silver.

18. HOLD-OPEN DEVICE

The hold-open device of a fire window shall -

- (a) incorporate a thermal-release unit -
 - (i) actuated by fusing, shattering or burning; and
 - (ii) which complies with the requirements of AS 1905 Parts 1 and 2;
- (b) on operation of the unit referred to in paragraph (a), allow the openable sash to close itself;
- (c) not provide for the openable sash to be held at less than 30° off vertical;
- (d) be situated near the top of the sash; and
- (e) not be accompanied by another device that can be made to hold the sash open.

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19. ANCHORING OF OUTER FRAME

Points of anchoring

(1) The outer frame of a fire window shall be anchored within its opening in a wall by Method A specified in sub-clause (2) or Method B specified in sub-clause (3), the points of anchoring being -

- (a) along each edge of the frame; and
- (b) not more than 175 mm from a corner of the frame and, elsewhere, not more than 610 mm apart, but, in any case, not more than 100 mm on either side of a glazing bar that supports the supplementary frame around an openable sash.

Method A

(2) For the purposes of sub-clause (1), the construction around the opening in a wall for the outer frame of a fire window shall be -

- (a) drilled; and
- (b) fitted with all-metal masonry anchors, other than aluminum, lead or tin,

and the frame shall be screwed towards the anchors, using M6 galvanized or cadmium-plated screws, until the anchors and frame are all firmly locked (known as "Method A").

Method B

(3) For the purposes of sub-clause (1), lugs of -

- (a) galvanized 25 mm x 6 mm steel flat, not less than 255 mm in length and bent sideways by 20 mm at one end for screwing to the frame; or
- (b) galvanized deformed 16 mm reinforcing bar, not less than 230 mm in length and drilled endwise at one end and tapped for screwing to the frame,

shall be screwed to the frame, using M8 galvanized or cadmium-plated screws, and built into the construction around the opening (known as "Method B").

20. MORTAR PACKING AROUND OUTER FRAME

The whole of the space between the outer frame of a fire window and the construction around its perimeter shall be packed with cement or composition mortar.

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SPECIFICATION No. 21.4(c)

HOLLOW GLASS BLOCK WINDOW PANELS

1. APPLICATION

Unless the contrary intention appears, a reference in this Specification to a window panel is a reference to a window panel of hollow glass blocks in a window opening required by Part 22 to be protected by a fire window with a fire-resistance rating of not less than one hour.

2. DIMENSIONS

An opening in which a window panel is to be installed shall be not more than -

- (a) 5.2 m² in area;
- (b) 2.415 m in height; and
- (c) 2.375 m in width.

3. FORM OF WINDOW PANEL

A window panel shall -

- (a) be constructed of glass blocks, jointing mortar and joint reinforcement; and
- (b) have an expansion joint, across its top and down its sides, in recesses in the wall at those positions.

4. GLASS BLOCKS

A hollow glass block in a window panel shall -

- (a) not support a load in addition to its own weight;
- (b) be not more than 197 mm in width and not more than 197 mm in height;
- (c) be not less than 98 mm in thickness;
- (d) have face shells not less than 6.3 mm in average thickness;
- (e) have a sanded finish, to provide a key for mortar, on each of the side, top and bottom faces; and

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- (f) be manufactured by casting 2 half-blocks and fusing these together to form a unit -
 - (i) seamless at the back and front; and
 - (ii) partly evacuated of air.

5. JOINTING MORTAR

The jointing mortar of a window panel shall be a mortar obtained by mixing Portland cement, hydrated lime and well graded clean sand in the proportions of -

- (a) 1 m³ of cement not less than 1,505 kg in mass;
- (b) 1 m³ of hydrated lime not less than 560 kg in mass; and
- (c) 4 m³ of sand,

no part of the mixture to contain an ingredient detrimental, in the opinion of the Building Controller, to the strength or setting of the whole mixture.

6. JOINT REINFORCEMENT

The joint reinforcement of a window panel shall be strips of galvanized steel-wire mesh -

- (a) 63 mm in width; and
- (b) of wires not less than 2 mm in thickness and not more than 13 mm apart, both parallel and perpendicular to the length of the strip.

7. EXPANSION JOINT INFILLING

The expansion joint infilling of a window panel shall be -

- (a) a non-hardening material incapable of resisting sustained loading; and
- (b) 25 mm in thickness where ready to be placed in position.

8. GLAZING COMPOUND FOR EXPANSION JOINT

A glazing compound for an expansion joint in a window panel shall be a non-setting mastic that does not harden except at a surface exposed to the air.

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9. RECESSES IN WALL

The jambs and the lintel of the opening for a window panel shall be recessed -

- (a) 57 mm in depth; and
- (b) to 22 mm in width more than the thickness of the glass blocks of the window panel,

to accept the sides and top of the panel, the expansion joint filling and the asbestos rope edge-sealing used.

10. COATING OF SILL

Before the first course of glass blocks is laid on a sill, the sill shall be coated with a bituminous emulsion or like material.

11. CONSTRUCTION OF WINDOW PANEL

A window panel shall be constructed so that -

- (a) bedding joints, including that of the first course, are of jointing mortar 6 mm in thickness;
- (b) perpends are 6 mm in width and filled with jointing mortar;
- (c) each third bedding joint incorporates a strip of joint reinforcement -
 - (i) which extends the whole length of the joint; and
 - (ii) secured lengthwise at each end to the adjacent part of the wall by being -
 - (A) carried not less than 230 mm into that part, at the same or a slightly higher level; or
 - (B) spliced by an overlap of 230 mm, in the window panel, to a strip of joint reinforcement so carried into that part;
- (d) the top and the 2 edges of the panel are finished short of the surrounding construction by 25 mm, except for the joint reinforcement; and
- (e) the gaps left between the panel and the parts of the wall in which it stands are -
 - (i) filled with expansion joint infilling;

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- (ii) caulked at each edge with 12 mm asbestos rope; and
- (iii) sealed outside the asbestos rope with glazing compound.

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PART 22 - SITUATION AND PROTECTION OF OPENINGS

22.1 APPLICATION

Unless the contrary intention appears, a reference in this Part to a building is a reference to a building other than a Class I or X building.

22.2 DEFINITION OF "OPENING"

For the purposes of this Part, an "opening" in an external wall includes -

- (a) a doorway;
- (b) a window or other glazed area, whether fixed or openable; and
- (c) any part of a wall, including a panel-filled part, that does not have the required fire-resistance rating specified by Part 16 for the structural parts of the wall.

22.3 VERTICAL SEPARATION OF OPENINGS IN EXTERNAL WALLS

Application

(1) This regulation applies to and in relation to a building of Type 1 or 2 construction, but does not apply to or in relation to -

- (a) such a building designed, constructed or adapted as an open-deck parking station; or
- (b) openings above one another in a stairway in such a building.

Alternative methods of separation

(2) Where an opening, including a part of an opening, in an external wall is situated vertically above another opening in the storey immediately below the storey in which the first-mentioned opening is situated, there shall be provided between those openings -

- (a) a spandrel or other vertical construction not less than 900 mm in height which -
 - (i) extends not less than 600 mm in height above the upper surface of the intervening floor;
 - (ii) comprises material which has a fire-resistance rating not less than that specified for external walls by, in the case of a Type 1 construction, Table 16.5(1) or, in the case of a Type 2 construction, Table 16.6(1); and

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- (iii) has no voids between the edge of the intervening floor and the inside face of the spandrel or other vertical construction; or
- (b) a slab or other horizontal construction that -
 - (i) projects outwards from the face of the wall for a distance of not less than 1.1 m;
 - (ii) extends along the wall for not less than 450 mm beyond the lateral limits of the openings; and
 - (iii) has a fire-resistance rating of not less than one hour.

22.4 PROTECTION OF OPENINGS IN EXTERNAL WALLS IN FIRE ZONES

Application

- (1) A reference in this regulation to an "opening" is a reference to an opening in an external wall on a site situated in a fire zone, which opening faces and is less than -
 - (a) 6 m from the farther boundary of a street which adjoins the site, other than an opening situated in a storey at ground level; or
 - (b) 3 m from a boundary of a site which adjoins the first-mentioned site.

Protection required

- (2) An opening shall be protected by -
 - (a) where the opening is a doorway - fire doors which have a fire-resistance rating of not less than one hour;
 - (b) where the opening is a window or other glazed area -
 - (i) fire windows which are automatic or permanently fixed in the closed position; or
 - (ii) automatic fire shutters,which have a fire-resistance rating of not less than one hour; and
 - (c) where the opening is other than a doorway or window or other glazed area - construction which has a fire-resistance rating of not less than one hour.

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Where protection not required for opening in external wall

(3) Sub-regulation (1) does not apply to or in relation to openings in an external wall for the purposes of -

- (a) where the external wall is of masonry or concrete construction - control joints, weep holes and the like;
- (b) where the external wall is of pre-cast construction - joints between panels; or
- (c) ventilators installed for sub-floor or cavity ventilation,

except that -

- (d) in the case of control joints, and joints between panels of pre-cast construction - the joints are not wider than are necessary for the purpose; and
- (e) in the case of ventilators -
 - (i) no ventilator is more than $45 \times 10^3 \text{ mm}^2$ in face area;
 - (ii) the ventilators are spaced in such a manner that no ventilator in the wall is within 2 m of another ventilator in the wall; and
 - (iii) the ventilators are made of a non-combustible material.

22.5 LIMITATIONS OF OPENINGS IN EXTERNAL WALLS IN FIRE ZONES

An opening between successive floors in an external wall referred to in regulation 22.4 shall occupy not more than one-third of the area of the wall between those floors except where the opening -

- (a) faces a street; and
- (b) is situated in a storey at ground level.

22.6 OPENINGS IN FIRE WALLS

Permissible openings in fire walls

(1) Subject to sub-regulation (4), a fire wall shall not have an opening except -

- (a) a doorway protected in accordance with this regulation; or

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- (b) an opening for services installed or protected in accordance with regulation 22.13.

Protection of doorways in fire walls

- (2) A doorway in a fire wall shall be protected by -
 - (a) 2 fire doors or fire shutters, one on each side of the doorway, each of which -
 - (i) has a fire-resistance rating of not less than half that required by Part 16 for the fire wall; and
 - (ii) is self-closing, or automatic where the automatic closing device is designed so as to operate in the event of fire in a part on either side of the fire wall;
 - (b) a fire door on one side, and a fire shutter on the other side, of the doorway, each of which complies with paragraph (a)(i) and (ii); or
 - (c) a single fire door or fire shutter which -
 - (i) has a fire-resistance rating not less than that required by Part 16 for the fire wall; and
 - (ii) is self-closing, or automatic where the automatic closing device is designed so as to operate in the event of fire in a part on either side of the fire wall.

Limitation on doorway openings in fire walls

- (3) The aggregate width of openings for doorways in a fire wall shall be not more than one-half of the length of the fire wall.

22.7 DOORWAYS IN FIRE-ISOLATED STAIRWAYS, FIRE-ISOLATED PASSAGEWAYS AND FIRE-ISOLATED RAMPS

A doorway, other than a doorway which opens onto a street or open space, that opens into a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp shall be protected by a self-closing fire door with a fire-resistance rating of not less than one hour.

22.8 OPENINGS IN FIRE-ISOLATED LIFT SHAFTS

Entrance doorways to fire-isolated lift shafts

- (1) Where a lift shaft is required under Part 23 to be fire-isolated, the entrance doorways to the shaft shall be protected by fire doors that -

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- (a) have a fire-resistance rating of not less than one hour;
- (b) comply with AS 1735 Part 11; and
- (c) are set to remain in the closed position at all times except where they are required to be open for the reception or discharge of passengers, goods or vehicles.

Lift indicator panels, &c.

(2) An indicator panel, lift call panel or other panel in a wall of a fire-isolated lift shaft shall, where it is more than $32.5 \times 10^3 \text{ mm}^2$ in area, be backed by construction which has a fire-resistance rating of not less than one hour.

22.9 DOORWAYS IN CLASS II AND III BUILDINGS

Doorways to public corridors, &c.

(1) A doorway which provides access from a sole-occupancy unit, or a room not within a sole-occupancy unit, in a Class II or III building, to -

- (a) a public corridor, public hallway or the like; or
- (b) the landing of an internal non-fire-isolated stairway which serves as a required exit,

shall be protected in accordance with sub-regulation (3).

Doorways between sole-occupancy units, &c.

(2) A doorway which provides access from a sole-occupancy unit to another sole-occupancy unit, or to a room not within another sole-occupancy unit, in a Class II or III building, shall be protected in accordance with sub-regulation (3).

Protection required

(3) A doorway referred to in sub-regulation (1) or (2) shall be protected by -

- (a) where the doorway is in a building of Type 1 or 2 construction - a self-closing fire door with a fire-resistance rating of not less than one hour; and
- (b) where the doorway is in a building of Type 3, 4 or 5 construction - a self-closing, tight-fitting, solid core door not less than 35 mm in thickness.

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22.10 ENTRANCE DOORWAYS OF CLASS IV BUILDINGS

Where a doorway of a Class IV building provides access to an internal part of the building in which the Class IV building is situated, the doorway shall be protected by -

- (a) where the second-mentioned building is of Type 1 or 2 construction - a self-closing fire door with a fire-resistance rating of not less than one hour; and
- (b) where the second-mentioned building is of Type 3, 4 or 5 construction - a self-closing, tight-fitting, solid core door not less than 35 mm in thickness.

22.11 OPENINGS IN FLOORS FOR CERTAIN SERVICES

Services in buildings of Type 1 or 2 construction

(1) Subject to sub-regulation (2), the services associated with the functioning of a building of Type 1 or 2 construction and which pass through a floor shall be -

- (a) in individual metal pipes, metal conduits, metal ducts or the like; or
- (b) be installed in shafts which comply with the requirements of Part 16 applicable to them.

Plumbing services in buildings of Type 1 or 2 construction

(2) The plumbing services associated with the functioning of a building of Type 1 or 2 construction and which pass through a floor of the building may be in polyvinyl chloride pipes and fittings where -

- (a) the building contains not more than 2 storeys and complies with the requirements of Part 19 applicable to it; or
- (b) the floors passed through are those between sanitary compartments which -
 - (i) are separated from other parts of the building as if they were ventilating, pipe, garbage or like shafts, not intended for the discharge of hot products of combustion; and
 - (ii) have all doorways which open from the sanitary compartments protected by self-closing fire doors with a fire-resistance rating of not less than one hour,

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and the openings for those polyvinyl chloride pipes and fittings comply with the requirements of regulation 22.13 applicable to openings for metal pipes, metal conduits, metal ducts or the like.

22.12 OPENINGS TO SHAFTS, &c.

Protection in buildings of Type 1 or 2 construction

(1) Subject to sub-regulation (2), an opening in a wall in a building of Type 1 or 2 construction which provides access to a ventilating, pipe, garbage or other service shaft shall be protected by -

- (a) a self-closing fire door with a fire-resistance rating of not less than one hour;
- (b) an access panel which has a fire-resistance rating of not less than one hour; or
- (c) where the shaft is a garbage shaft - one of the devices referred to in paragraph (a) or (b) or by a door or hopper of non-combustible construction.

Sanitary compartments

(2) Sub-regulation (1) does not apply to or in relation to an opening which is -

- (a) situated within a sanitary compartment; and
- (b) provided with a door or panel which, together with its frame, is non-combustible or has a fire-resistance rating of not less than 30 minutes.

22.13 OPENINGS FOR SERVICE INSTALLATIONS

Application

(1) A reference in this regulation to an opening is a reference to an opening in a wall, floor or ceiling which is required to have -

- (a) a fire-resistance rating; or
- (b) a resistance to the incipient spread of fire.

Pipes and conduits

(2) An individual opening for metal pipes, metal conduits, metal ducts or the like which convey -

- (a) wires or cables for electrical or telephone services;

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- (b) gas, including liquefied petroleum gas; or
- (c) other services associated with the functioning of a building,

shall be not more than is, in the opinion of the Building Controller, necessary to permit the installation of the service, and all gaps around the opening shall be packed or otherwise treated, to the full thickness of the wall, floor or ceiling through which it passes, so that its fire-resisting performance is not impaired.

Wiring not in pipes, &c.

(3) Wires or cables for electrical, telephone or other services that are -

- (a) not enclosed in metal pipes, metal conduits, metal ducts or the like or other non-combustible material; and
- (b) installed within, or pass through, a wall, floor or ceiling,

shall be installed in accordance with Part 55, including the requirements of that Part applicable to the protection of openings made for those services.

Other services

(4) An opening for a service not otherwise provided for in this regulation shall be protected in an approved manner.

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PART 23 - SEPARATION OF BUILDING INTO PARTS BY
FIRE-RESISTING CONSTRUCTION

23.1 SEPARATION INTO PARTS BY FIRE WALLS

Where part of building regarded as separate building

(1) A part of a building that is, in accordance with this regulation, fire-separated from the remainder of the building by a fire wall shall be subject to this Code as if the part were a separate building.

Fire wall to extend through all storeys

(2) A fire wall shall extend through all storeys, and parts in the nature of storeys, that are common to the relevant part, and each adjoining part, of a building and shall carry through to the underside of a roof covering of the building.

Where parts have roofs at different levels

(3) Where the roof of an adjoining part of a building is lower than the roof of the other part of the building, the fire wall shall be carried through to the underside of the roof covering of the higher roof or to 6 m above the roof covering of the lower roof, whichever is the lesser.

Combustible materials not to cross fire walls

(4) A timber purlin or other combustible material shall not pass through or cross a fire wall.

23.2 SEPARATION BETWEEN PARTS OF DIFFERENT CLASSIFICATIONS

Building which has parts of different classifications

(1) Subject to regulation 23.3, where, in accordance with Part 6, a building has parts of different classifications, the parts shall be separated from one another, in accordance with this regulation, by fire-resisting construction.

Parts of different classifications in same storey

(2) Where parts referred to in sub-regulation (1) of a building adjoin each other in the same storey, they shall be separated in the storey by a fire wall with a fire-resistance rating not less than that determined in accordance with regulation 16.13(1)(a).

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Parts of different classifications within different storeys

(3) Where parts referred to in sub-regulation (1) of a building are situated one above the other in adjoining storeys, they shall be separated so that -

- (a) where the parts are in a building of Type 1 or 2 construction - the floor between the adjoining parts has a fire-resistance rating not less than that specified for a floor, where it is Type 1 construction, in Table 16.5(1) or, where it is Type 2 construction, in Table 16.6(1) for the classification of the lower of the 2 adjoining storeys; and
- (b) where the parts are in a building of Type 3, 4 or 5 construction and one of the adjoining parts is a Class II, III or IV building - the underside of the floor, including the sides and undersides of the floor beams, if any, between the adjoining parts is protected by -
 - (i) 13 mm plasterboard;
 - (ii) 12 mm mesh-reinforced fibrous plaster in which the mesh is of 13 mm x 13 mm x 0.710 mm welded wire situated not more than 6 mm from the exposed face; or
 - (iii) any other material not less fire-resisting than 13 mm plasterboard,

the material in each case being of fire-resisting grade and fixed in accordance with the normal trade practice applicable to the fixing of the material as a fire-resisting covering.

23.3 EXEMPTION FROM SEPARATION WITHIN SAME STOREY

Where parts with different classifications of a building adjoin each other in the same storey and each of the structural members throughout the storey has a fire-resistance rating of -

- (a) where Part 16 specifies the same rating for that member for each of those classifications - the rating so specified; and
- (b) where Part 16 specifies different ratings for that member for any of those classifications - the higher of the ratings so specified,

a fire wall is not required between the parts.

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23.4 SEPARATION OF LIFTS FROM REMAINDER OF BUILDING

Where required

(1) A lift which connects more than 2 storeys in a building of Type 1, 2 or 3 construction shall be separated from the remainder of the building by way of enclosure in a fire-resisting shaft in which -

- (a) the walls have the fire-resistance ratings required by Part 16; and
- (b) openings for lift landing doors and services are protected in accordance with Part 22.

Stairways and lifts in the one shaft

(2) A stairway and lift shall not be incorporated in the one shaft where the stairway or lift is required to be in a fire-resisting shaft.

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PART 24 - MEANS OF EGRESS

Division 1 - Class II, III, IV, V, VI, VII, VIII and IX Buildings

24.1 APPLICATION

Unless the contrary intention appears, a reference in this Division to a building is a reference to a building other than a Class I or X building.

24.2 ALTERATIONS, &c., TO EXISTING BUILDINGS

Where alterations, extensions or additions are to be made to an existing building, and where the alterations, extensions or additions would, in the opinion of the Building Controller, adversely effect the exits or paths of travel to the exits of the building, the Building Controller may, as he thinks fit, require the building to comply with all or any of the requirements of this Part applicable to the building.

24.3 DIRECT ACCESS TO ROOMS FROM CERTAIN EXITS

A doorway from a room in a building, other than a room which is -

- (a) a sole-occupancy unit which occupies the whole of a storey; or
- (b) a sanitary compartment,

shall not open directly into a stairway, passageway or ramp that is required to be fire-isolated.

24.4 CONSTRUCTION OF FIRE-ISOLATED RAMP

A fire-isolated ramp may be used instead of a fire-isolated stairway where the construction which encloses the ramp complies with the requirements of Part 16 applicable to the shaft of a fire-isolated stairway.

24.5 EXTERNAL STAIRWAY USED INSTEAD OF FIRE-ISOLATED STAIRWAY

External stairway may serve as fire-isolated stairway

(1) Subject to this regulation, an external stairway may serve as a required exit instead of a fire-isolated stairway.

Construction of external stairway

(2) An external stairway referred to in sub-regulation (1), including its connecting bridges, if any, shall be constructed of non-combustible material.

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Enclosure under certain conditions

(3) Subject to sub-regulation (4), where a part of an external stairway referred to in sub-regulation (1) is less than 6 m from a window or doorway in an external wall of the building from which the stairway serves as a required exit -

- (a) the stairway shall be enclosed for its full height above the lowest level of the window or doorway by construction which has a fire-resistance rating of not less than one hour; and
- (b) no window or other glazed part in the enclosing walls of the stairway shall be within 6 m of a window or doorway in the external walls of the building.

Exemption from enclosure otherwise required

(4) Sub-regulation (3) does not apply to or in relation to an external stairway in a building where -

- (a) a window, if any, in an external wall of the building from which the stairway serves as a required exit is not less than 3 m from the stairway;
- (b) a window, if any, 6 metres or less from the stairway is protected by -
 - (i) automatic fire shutters; or
 - (ii) fire windows which are automatic or permanently fixed in the closed position, and the automatic fire shutters or fire windows have a fire-resistance rating of not less than one hour;
- (c) a doorway, if any, less than 3 m from the stairway is protected by self-closing fire doors with a fire-resistance rating of not less than one hour; and
- (d) a doorway, if any, which is more than 3 m but not more than 6 m from the stairway is protected by self-closing fire doors, or automatic fire shutters, with a fire-resistance rating of not less than one hour.

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24.6 ESCALATORS AND NON-REQUIRED STAIRWAYS

Number of storeys served

(1) Subject to sub-regulation (2), an escalator or non-required non-fire-isolated stairway shall not connect more than -

- (a) 3 consecutive storeys where each of those storeys is provided with an approved sprinkler system throughout; or
- (b) 2 consecutive storeys,

one of which storeys shall be situated at a level at which egress to a street or open space is provided.

Exemption

(2) Sub-regulation (1) does not apply to or in relation to an escalator or stairway referred to in that sub-regulation which is -

- (a) within a sole-occupancy unit in a Class II building; or
- (b) an external escalator or stairway.

24.7 TRAVEL VIA NON-FIRE-ISOLATED STAIRWAYS

A non-fire-isolated stairway which serves as a required exit in a building shall provide a continuous means of travel via its flights of stairs and landings from each storey served by it to a level of the building at which egress to a street or open space is provided.

24.8 DISCHARGE OF FIRE-ISOLATED STAIRWAYS AND FIRE-ISOLATED RAMPS

Discharge shall be to street or open space

(1) Subject to sub-regulation (2), a fire-isolated stairway or fire-isolated ramp shall lead directly, or by a fire-isolated passageway, to a street or open space.

Discharge to storey, &c., in building that is not fully enclosed

(2) Sub-regulation (1) does not apply to or in relation to a fire-isolated stairway or fire-isolated ramp -

- (a) in a Class V, VI, VII or VIII building; and
- (b) which discharges into a storey or like part within the confines of the building,

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where -

- (c) the storey or like part is at a level at which egress to a street or open space is provided;
- (d) the storey or like part is unenclosed or only partly enclosed; and
- (e) the walls, columns, piers, glazing or other construction at the periphery of the storey or like part do not occupy, in total, more than one-third of its perimeter.

24.9 SEPARATION OF RISING AND DESCENDING STAIR FLIGHTS

No direct connection between certain flights of stairs

(1) Where a stairway which serves as a required exit in a building is fire-isolated, there shall not be a direct connection between -

- (a) a flight of stairs which rises from a storey below the lowest level of egress to a street or open space; and
- (b) a flight of stairs which descends from a storey above that level.

Construction separating flights of stairs

(2) A construction that is common to, or separates, rising and descending flights of stairs referred to in sub-regulation (1) shall have a fire-resistance rating of not less than one hour.

24.10 DISCHARGE OF NON-FIRE-ISOLATED STAIRWAYS AND NON-FIRE-ISOLATED RAMPS IN CLASS VI BUILDINGS

A required non-fire-isolated stairway or non-fire-isolated ramp in a Class VI building shall discharge at a point not more than -

- (a) 18 m from -
 - (i) a doorway which provides egress to a street or open space; or
 - (ii) a fire-isolated passageway which leads to a street or open space; or
- (b) 30 m from one of 2 doorways or passageways referred to in paragraph (a) where travel to each of the doorways or passageways from the stairway or ramp is in opposite or approximately opposite directions.

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24.11 INSTALLATIONS IN EXITS AND PATHS OF TRAVEL

Gas meters

(1) A gas meter or gas pipe shall not be installed in a required exit or a corridor, hallway, lobby or the like which leads to a required exit.

Other services

(2) A fuel pipe, or electricity meters or ducts, telephone switchboards or electrical motors or other motors which serve equipment in a building shall not be installed in a required exit or in a corridor, hallway, lobby or the like which leads to a required exit in the building unless enclosed by non-combustible construction or a material specified in regulation 16.10.

24.12 OPENING TO CHUTES OR DUCTS FOR HOT PRODUCTS OF COMBUSTION

An opening to a chute or duct intended for conveying the hot products of combustion shall not be situated in a required exit in a building or a corridor, hallway, lobby or the like which leads to a required exit in the building.

24.13 ENCLOSURE OF SPACE UNDER STAIRS

Space below fire-isolated stairway

- (1) A space which is -
 - (a) below a flight of stairs of a required fire-isolated stairway; and
 - (b) within the fire-isolated shaft of the fire-isolated stairway referred to in paragraph (a),

shall not be enclosed to form a cupboard or like enclosed space.

Space below non-fire-isolated stairway

(2) The space below a flight of stairs of a non-fire-isolated stairway, including an external stairway, which serves as a required exit shall not be enclosed to form a cupboard or like enclosed space unless -

- (a) the enclosing walls and ceilings have a fire-resistance rating of not less than one hour; and
- (b) an access doorway, if any, to the enclosed space is fitted with a self-closing fire door which has a fire-resistance rating of not less than one hour.

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24.14 DOORWAYS AND DOORS WHICH SERVE AS EXITS, &c.

Application

(1) Unless the contrary intention appears, a reference in this regulation to a door or doorway is a reference to a door or doorway which -

- (a) serves as a required exit; or
- (b) forms part of a required exit.

Revolving doors and roller shutters

(2) A revolving door or roller shutter shall not be fitted to a doorway.

Sliding doors

(3) A sliding door shall not be fitted to a doorway unless -

- (a) the doorway leads to a street or open space; and
- (b) where the door is power-operated - it is constructed so that, in the event of malfunction or failure of the power source, it may be opened manually under a force of not more than 110N.

Encroachment of swinging doors on stairway

- (4) A swinging door fitted to a doorway shall not -
 - (a) encroach, at any part of its swing, by more than 510 mm on the required width of a required stairway or ramp, including the landings of the stairway or ramp; and
 - (b) encroach, where fully open, by more than 100 mm on the required width of a required exit,

the measurement of encroachment in each case to include door handles or other furniture or attachments to the door.

Direction of swing

(5) A swinging door fitted to a doorway which forms part of a required exit shall swing in the direction of egress except in the case of a doorway -

- (a) which opens into a sanitary compartment; or

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- (b) other than a doorway of a fire-isolated stairway, fire-isolated ramp or fire-isolated passageway - which opens to a street, open space or external balcony where the door is fitted with an approved means of fixing it readily in the fully open position.

Operation of latch on door

(6) Subject to sub-regulation (7), a door shall be readily openable, without a key, by a single-handed action, on a single device which is -

- (a) a lever handle or panic bar situated not less than 900 mm in height and not more than 1.2 m in height above the floor level; and
- (b) not a knob, bolt, padlock or separately operated deadlock.

Exemption

(7) The Building Controller may exempt a door from the requirements of sub-regulation (6) where -

- (a) each exit, and door, shutter, grille or the like referred to in regulation 24.15(1), in the part of the building in which the door is situated, can be immediately unlocked by -
 - (i) the manual operation of a control switch which is -
 - (A) situated not less than 900 mm in height and not more than 1 m in height above the floor;
 - (B) not contained within a protective enclosure; and
 - (C) a lever or toggle-type switch; or
 - (ii) a person nominated by the owner of the part of the building in which the door is situated; and
- (b) he is satisfied that the owner of the building has made arrangements so that, in the event of an emergency, persons in the part of the building in which the door is situated can gain egress.

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24.15 DOORS, &c.

Doors in path of travel not to be locked

(1) Subject to this regulation, a door, shutter, grille or the like that is installed in the path of travel to a required exit, established when measured in accordance with regulation 24.39, shall have its locking arrangements, if any, installed in such a way as to comply with regulation 24.14(6) as if, for that purpose, the door, shutter, grille or the like were a required exit.

Exemptions to sub-regulation (1)

(2) Sub-regulation (1) does not apply to or in relation to a door, shutter, grille or the like that -

- (a) serves a vault or strongroom;
- (b) is subject to regulation 24.14(7);
- (c) serves a sole-occupancy unit; or
- (d) is a door in a secondary path of travel, being a path of travel other than a path of travel measured in accordance with regulation 24.39, from a part of a building to a required exit.

Exemption for inaccessible room or space

(3) Where, in a building, the owner of the building considers it essential for a door, shutter, grille or the like to be locked in such a way as to require the use of a key to open it, the Building Controller may exempt the door, shutter, grille or the like from the application of sub-regulation (1) where he is satisfied that the room or space barred from entrance by the door, shutter, grille or the like, when locked, will at all times be inaccessible to a person other than a person with a key which opens the lock.

24.16 THRESHOLD OF DOORWAY

Incorporation of steps or ramps at threshold of certain doorways

(1) Subject to sub-regulation (2), the threshold of a doorway which serves as a required exit or forms part of a required exit shall not incorporate a step or ramp at a point closer to the doorway than the width of the door leaf of the doorway.

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Exemption

(2) Sub-regulation (1) does not apply to or in relation to a doorway which opens onto a street, open space or external balcony where the door sill of the doorway is not more than 190 mm in height above the finished surface of the street, open space or external balcony to which the doorway opens.

24.17 EGRESS TO OPEN SPACE

Where a required exit leads to an open space that is at a different level to the street to which the open space is connected, the path of travel to the street shall be by way of -

- (a) a ramp or other incline which has a grade of not more than 1 in 12 at any part; or
- (b) a stairway which complies with the requirements of this Part applicable to it.

24.18 WIDTH AND HEIGHT OF STAIRWAY

Width and height of stairway

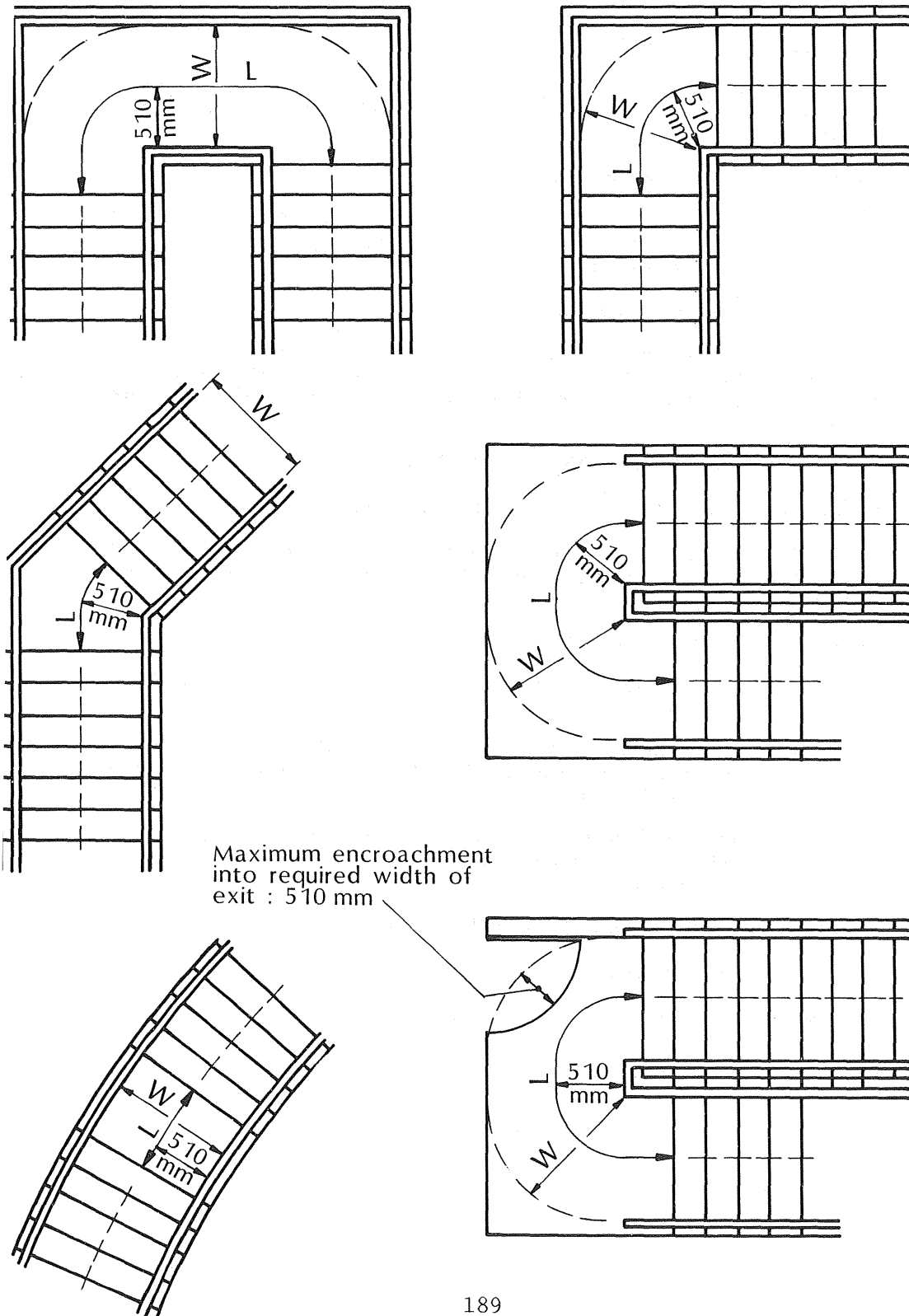
(1) The width of a stairway, as shown in Figure 24.18(1), shall be measured clear of all obstructions, including handrails, projecting parts of balustrades and the like, and shall extend without interruption, except for ceiling cornices, to not less than 2.03 m in height above a line along the nosings of the treads of the stairway or the floor of the landing.

Stairway which is more than 2.04 m in width

(2) A stairway which is more than 2.04 m in unobstructed width shall, for the purposes of this Part, be deemed to have a width of 2.04 m unless -

- (a) it is divided by a balustrade or handrail which is continuous between landings; and
- (b) each division of balustrade or handrail referred to in paragraph (a) is not less than 1.02 m in width, in which case the full unobstructed width of the stairway may be counted for the purposes of this Part.

FIGURE 24.18(1)



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24.19 LANDINGS

Landings between flights

(1) A stairway which serves as a required exit shall not have more than 18 risers in a flight of stairs before a landing is provided.

Length of travel along landing

(2) The length of travel along a landing, measured 510 mm from the inside edge of a landing, shall be not less than 760 mm as shown in Figure 24.18(1).

Surface finish of landing

(3) A landing shall have a non-slip finish throughout or, where it leads to a flight of stairs below the landing, an approved non-skid strip near the edge of the landing.

24.20 TREADS AND RISERS OF STAIRWAYS

Going and riser height of flight of stairs

(1) The going and riser height of a flight of stairs in a required stairway shall be constant throughout the flight.

Construction of treads of flight of stairs

(2) The treads of a flight of stairs in a required stairway shall be -

- (a) constructed within the limits of shape and size specified in Table 24.20(2) and shown in Figure 24.20(2); and
- (b) provided with a non-slip finish throughout or with an approved non-skid strip near the edge of the nosings of the stairs.

Construction of risers of flight of stairs

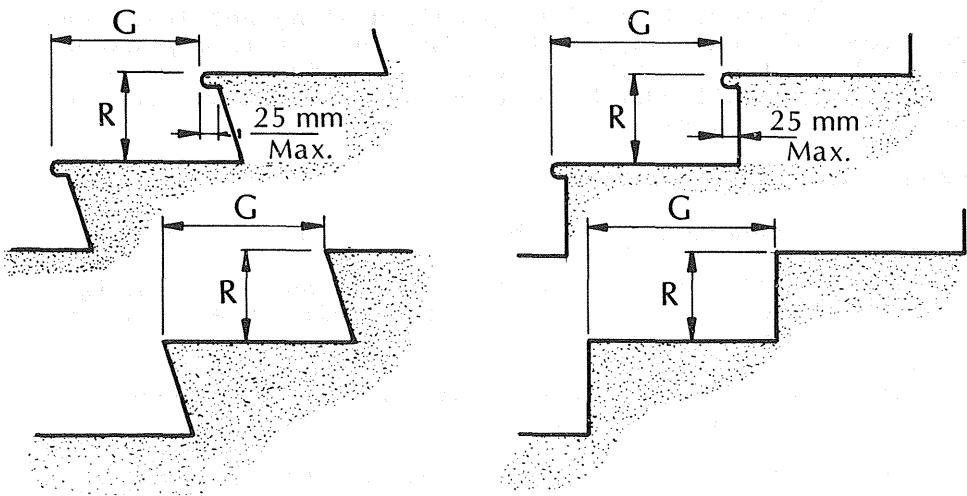
(3) The risers of a flight of stairs in a required stairway shall be constructed within the limits of shape and size specified in Table 24.20(2) and shown in Figure 24.20(2).

TABLE 24.20(2)
LIMITS OF RISER HEIGHT AND GOING

Shape of treads in plan	Risers height in mm (R)		Going in mm (G)		Quantity 2R - G			
	Max.	Min.	Max.	Min.	Max.	Min.		
Rectangular	190	115	395	250	630	585		
Tapered as in curved stairway	190	115	Wide end of tread	Narrow end of tread	Wide end of tread		Narrow end of tread	
					Max.	Min.	Max.	Min.
	190	115	445	205	675	625	590	545

FIGURE 24.20(2)

DIMENSIONS OF TREADS AND RISERS



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24.21 RAMPS WHICH SERVE AS REQUIRED EXITS

Width of ramp

(1) The width of a ramp which serves as a required exit shall be measured clear of all obstructions, including handrails, projecting parts of balustrades and the like, and shall extend without interruption, except for ceiling cornices, to not less than 2.03 m in height above the floor surface of the ramp.

Gradient of ramp

(2) The slope of a ramp which serves as a required exit shall not have a grade of more than 1 in 12 at any part.

Surface finish of ramp

(3) The floor surface of a ramp shall have a non-slip finish throughout.

24.22 HANDRAILS

Where handrail is required

(1) A handrail shall be provided along the side of a stairway or ramp, and along the side of a corridor, hallway, external access balcony, bridge or the like, which leads to an exit, where that side is not bounded by a wall and is more than 915 mm in height or, in the case of a stairway, more than 5 risers above the finished surface of the adjoining floor or ground.

Number of handrails

(2) A handrail shall be provided along not less than one side of each flight of stairs in a stairway except that, where the flight of stairs is 1.525 m or more in width, a handrail shall be provided along each side of the flight of stairs.

Height, &c., of handrails

(3) A handrail shall be fixed at not less than -

(a) in the case of a stairway - 865 mm in height above the nosings of the stair treads of the stairway; and

(b) in any other case - 1.05 m in height above the relevant surface,

and be constructed so that there is no obstruction on or above the handrail that will tend to break a hand hold.

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Handrails to be continuous between landings

(4) A handrail shall be continuous between the landings of a flight of stairs.

24.23 WIDTH OF EXITS IN ACCORDANCE WITH NUMBER OF PERSONS

Application

(1) This regulation applies wherever this Part regulates the minimum width of -

(a) a required exit; or

(b) a doorway which leads to a required exit,

in accordance with the number of persons accommodated in a storey.

Interpretation

(2) For the purposes of this regulation, the floor area of a storey or part of a storey does not include spaces set aside for -

(a) lifts, stairs or escalators;

(b) corridors, hallways or lobbies;

(c) service ducts; or

(d) sanitary compartments and other ancillary uses,

or the like.

Calculation of number of persons accommodated

(3) The number of persons to be accommodated in a storey shall be the sum of the numbers obtained by dividing the floor area of each part of the storey by the relevant number of square metres per person specified in Table 24.23(3) in accordance with the use of that part.

Where Table 24.23(3) does not specify use

(4) Where a particular use of a part of a storey is not specified in Table 24.23(3), the number of square metres per person to be used in a calculation under sub-regulation (3) applicable to the part shall be as determined by the Building Controller.

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TABLE 24.23(3)

AREAS PER PERSON IN ACCORDANCE WITH USE

Type of Use	Square metres per person
Assembly room -	
(a) civic, political, transit, religious, social or recreational purposes;	1.2
(b) entertainment or amusement purposes	1.2
Bar	1
Boiler	30
Boardroom	2
Boarding house	15
Cafe	1
Cafeteria	1
Computer room	25
Dining room	1
Factory -	
(a) a machine shop, fitting shop, or like place for cutting, grading, finishing or fitting of metals or glass, except in the fabrication of structural steel work or manufacture of vehicles or bulky products;	5
(b) areas used for fabrication and pro- cessing other than those referred to in paragraph (a);	50
(c) a space in which the layout and natural use of fixed plant or equipment determine the number of persons which will occupy the space during working hours	The area per person deter- mined by the natural use of the fixed plant or equipment as approved
Garage - public	30
Guest-house	15
Hostel	15
Kiosk	1
Kitchen	10
Laboratory	10
Laundry	10
Library - reading space	2
- storage space	30

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TABLE 24.23(3) - continued

Type of Use	Square metres per person
Office, including one for typewriting or document copying	10
Plant room for - ventilation, electrical or other service units	30
- Boilers or power plant	50
Reading room	2
Restaurant	1
Shop - space for sale of goods -	
(a) at a level entered direct from the open air or a lower level	2.5
(b) all other levels	5
Showroom - display area	5
Staff room	10
Storage space	30
Switch room	30
Telephone exchange - private	30
Transformer room	30
Workshop - for maintenance staff	30
- for manufacturing processes	As for "Factory"

24.24 EXIT SIGNS

Exit signs to be provided at certain doorways

(1) An exit sign shall be provided on or near a doorway which -

- (a) affords direct access from a storey to an -
 - (i) enclosed stairway or ramp which serves as;
 - (ii) external stairway which serves as; or
 - (iii) external access balcony which leads to,
a required exit; and
- (b) discharges from an enclosed stairway or ramp at each level of access to a street or open space.

Exit signs to be provided in certain corridors, &c.

(2) An exit sign shall be installed in a corridor, hallway, lobby or the like in a building, indicating the direction of the exit to which it leads, where the Building Controller is of the opinion that the situation of the exit will not otherwise be readily apparent to persons who occupy or visit the building.

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Position of exit signs

- (3) An exit sign shall -
 - (a) where it is provided under sub-regulation (1) - be installed on or near the doorway for which it is provided in such a position as to be clearly visible to persons approaching the exit or balcony referred to in that sub-regulation; and
 - (b) where it is provided under sub-regulation (2) - be installed in an approved position.

Details on signs

(4) Subject to sub-regulations (5) and (6), a sign required by this regulation shall comply with AS 2293 Part 1.

Exemption for certain Class II buildings

(5) This regulation does not apply to or in relation to a Class II building where a doorway referred to in sub-regulation (1) in the building is clearly and legibly labelled on the side remote from the exit or balcony with the word "EXIT" in capital letters not less than 25 mm in height in a colour which contrasts with that of the background of the letters.

Entrance doors to certain sole-occupancy units

(6) This regulation does not apply to or in relation to an entrance doorway of a sole-occupancy unit in a Class II, III or IV building.

Division 2 - Class II and III Buildings

24.25 APPLICATION

Unless the contrary intention appears, a reference in this Division to a building is a reference to a Class II or III building other than -

- (a) a sole-occupancy unit; or
- (b) a room in a sole-occupancy unit,
in such a building and which has -
 - (c) direct access to a street or open space.

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24.26 NUMBER OF EXITS

Buildings which have rise of not more than 6 storeys

(1) Subject to sub-regulation (2), a building which has a rise of not more than 6 storeys is not required to have more than one exit except where the requirements of regulation 24.27 cannot be met by one exit in the building.

Buildings of Type 4 or 5 construction which have rise of 2 storeys

(2) Not less than 2 exits shall be provided in a building of Type 4 or 5 construction which has a rise of 2 storeys.

Buildings which have rise of more than 6 storeys

(3) Not less than 2 exits shall be provided in a building which has a rise of more than 6 storeys.

24.27 SITUATION OF SOLE-OCCUPANCY UNITS, &c.

Where one exit only is provided

(1) Where one exit only is provided in a Class II or III building -

- (a) the entrance doorway of a sole-occupancy unit in the building shall be not more than 5.5 m from the exit; and
- (b) no point on the floor of a room, not being a room in a sole-occupancy unit, in the building shall be more than 15 m from the exit.

Where 2 or more exits are provided

(2) Where 2 or more exits are provided in a Class II or III building -

- (a) the entrance doorway of a sole-occupancy unit in the building shall be not more than 5.5 m; and
- (b) no point on the floor of a room, not being a room in a sole-occupancy unit, in the building shall be more than 15 m,

from a point from which travel in different directions to 2 of those exits is available.

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24.28 DISTANCE BETWEEN ALTERNATIVE EXITS

Where 2 exits serve as alternative exits in relation to a room or sole-occupancy unit in a Class II or III building, the distance between the 2 exits shall be not more than 45 m and, in the case of a Class III building, the distance between the 2 exits shall be not less than 9 m.

24.29 MEASUREMENT OF DISTANCES

Definition of "nearest part of an exit"

(1) In this regulation, "nearest part of an exit" means -

- (a) in the case of a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp - the nearest part of the doorway which provides access to the stairway, passageway or ramp;
- (b) in the case of a non-fire-isolated stairway - the nearest part of the nearest riser of the stairway;
- (c) in the case of a non-fire-isolated ramp - the nearest part of the junction of the floor of the ramp and the floor of the storey which it serves; and
- (d) in the case of a doorway which opens onto a street or open space - the nearest part of the doorway.

Methods of measurement

(2) A distance referred to in regulation 24.27 or 24.28 shall be measured so that -

- (a) in the case of a room, not being a sole-occupancy unit - the distance includes the straight-line measurement from any point on the floor of the room to the nearest part of a doorway which leads from the room, together with the distance from that part of the doorway to -
 - (i) the single required exit; or
 - (ii) a point from which travel in different directions to 2 required exits is available,

as the case may be;

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- (b) subject to paragraph (d), the distance from the doorway of a room or sole-occupancy unit 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, as the case may be;
- (c) subject to paragraph (d), the distance between 2 required exits is measured in a straight line between the nearest parts of the exits; and
- (d) where a corridor, hallway, external balcony or other path of travel which leads to a required exit, or connects 2 required exits, includes a curve or change of direction, the distance includes the shortest measurement along the corridor, hallway, external balcony or other path of travel, whether by curves, straight lines or a combination of curves and straight lines.

24.30 ALTERNATIVE EXITS TO DISCHARGE SEPARATELY

Where 2 or more stairways or ramps serve as required exits in a Class II or III building, the exits shall provide separate egress to a street or open space and shall not be connected by a corridor, hallway, lobby or the like unless the exits are separated by a fire wall, fire door or some other approved fire-resisting construction.

24.31 STAIRWAYS IN CLASS II BUILDINGS

Certain stairways to be fire-isolated

(1) Subject to sub-regulation (2), a required stairway in a Class II building shall be a fire-isolated stairway.

Where non-fire-isolated stairways are permitted

(2) A non-fire-isolated stairway may serve as a required exit in a Class II building where the stairway -

- (a) connects not more than 3 storeys or, where not less than one storey is set aside solely for the accommodation of motor vehicles or other ancillary purposes, not more than 4 storeys; and
- (b) complies with regulation 24.33.

24.32 STAIRWAYS IN CLASS III BUILDINGS

Certain stairways to be fire-isolated

(1) Subject to sub-regulation (2), a required stairway in a Class III building shall be a fire-isolated stairway.

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Where non-fire-isolated stairways are permitted

(2) A non-fire-isolated stairway may serve as a required exit in a Class III building where the stairway -

- (a) connects not more than 2 storeys or, where not less than one storey is set aside solely for the accommodation of motor vehicles or other ancillary purposes, not more than 3 storeys; and
- (b) complies with regulation 24.33.

24.33 CONDITIONS TO BE MET BY NON-FIRE-ISOLATED STAIRWAYS

Travel distance to street or open space

(1) The distance between the doorway of a room or sole-occupancy unit in a building and the point of egress to a street or open space by way of a non-fire-isolated stairway that serves that room or sole-occupancy unit shall be not more than -

- (a) in a building of Type 4 or 5 construction - 30 m; and
- (b) in any other case - 60 m.

Measurement of travel distance

(2) For the purposes of sub-regulation (1), the distance to a stairway shall be measured in accordance with regulation 24.29, the remainder of the distance being measured -

- (a) along the shortest line of travel to the street or open space; and
- (b) in the case of the treads and risers of a stair - along a line which connects the nosings of the treads.

24.34 DIMENSIONS OF DOORWAYS, EXITS AND PATHS OF TRAVEL

Doorways

- (1) A doorway in a Class II or III building which -
 - (a) serves as a required exit from a storey; or
 - (b) leads to or forms part of a required exit or path of travel to a required exit,

shall have a clear opening of not less than 1.98 m in height and not less than 760 mm in width.

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Exits and paths of travel

(2) A required exit and path of travel to a required exit in a Class II or III building shall, except for doorways, have a minimum unobstructed vertical clearance throughout of 2.03 m and a minimum unobstructed width throughout of 1.02 m.

Division 3 - Class IV, V, VI, VII and VIII Buildings

24.35 APPLICATION

Unless the contrary intention appears, a reference in this Division to a building is a reference to a Class IV, V, VI, VII or VIII building.

24.36 NUMBER OF EXITS REQUIRED

Buildings which have rise of not more than 6 storeys

(1) Subject to sub-regulation (2), a building which has a rise of not more than 6 storeys is not required to have more than one exit except where the requirements of regulation 24.37(1) cannot be met by one exit in the building.

Certain storeys of low level to have 2 exits

(2) Where egress from a storey in a building involves a rise within the building of more than 1.5 m, not less than 2 exits shall be provided from the storey.

Buildings which have rise of more than 6 storeys

(3) Not less than 2 exits shall be provided in a building which has a rise of more than 6 storeys.

24.37 SITUATION OF PARTS OF BUILDING IN RELATION TO EXITS

Where one exit only is provided

(1) Where one exit only is provided in a Class V, VI, VII or VIII building, no point on a floor of the building shall be more than 15 m from the exit.

Where 2 or more exits are provided

(2) Where 2 or more exits are provided in a building, no point on a floor of the building shall be more than 15 m from -

- (a) one of those exits; or

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- (b) a point from which travel in different directions to 2 of those exits is available, in which case the distance to not less than one of those exits shall be not more than 40 m.

Distance to an exit in ground storey of Class VI building

(3) The distance to an exit which serves, in a Class VI building, a storey at the level of access to a street or open space shall be not more than 18 m.

Distance to exits, &c., in Class IV buildings

(4) The entrance doorway to a Class IV building shall be situated at a distance of not more than 5.5 m from -

- (a) an exit; or
- (b) a point from which travel in different directions to 2 exits is available.

24.38 DISTANCE BETWEEN ALTERNATIVE EXITS

Maximum distance between certain alternative exits

(1) Where 2 required exits serve as alternative exits in relation to a point on the floor of a storey, the distance between those 2 exits shall be not more than 60 m.

Minimum distance between certain alternative exits

(2) Where 2 or more required exits serve a storey in a building, the distance between not less than 2 of the exits shall be not less than 9 m.

24.39 MEASUREMENT OF DISTANCES

A distance referred to in regulation 24.37 or 24.38 shall be measured so that -

- (a) in the case of a room - the distance includes the straight-line measurement from any point on the floor of the room to the nearest part of a doorway which leads from the room, together with the distance from that part of the doorway to -
 - (i) the nearest part of a required exit; or
 - (ii) a point from which travel in different directions to 2 required exits is available,

as the case may be;

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- (b) subject to paragraphs (d), (e) and (f), the distance from the doorway of a room, or of a Class IV building, or from a point on the floor not within a room is measured in a straight line to -

- (i) the nearest part of a required exit; or
- (ii) a point from which travel in different directions to 2 required exits is available,

as the case may be;

- (c) subject to paragraphs (d), (e) and (f), the distance between 2 required exits is measured in a straight line between the nearest parts of the exits;

- (d) where a corridor, hallway, external balcony or other path of travel which leads to a required exit or connects 2 required exits, includes a curve or change of direction, the distance includes the shortest measurement along the corridor, hallway, external balcony or other path of travel, whether by curves, straight lines or a combination of curves and straight lines;

- (e) where more than one corridor, hallway or other internal path of travel connects 2 required exits, the measurement is along that path of travel producing the greatest distance; and

- (f) where a wall, including a demountable partition wall, that does not bound -

- (i) a room; or

- (ii) a corridor, hallway or the like,

necessitates a change of direction in proceeding to a required exit, the distance is measured along the line of travel past that wall or partition.

24.40 REQUIRED STAIRWAYS IN CERTAIN BUILDINGS TO BE FIRE-ISOLATED STAIRWAYS

A required stairway in a Class V, VI, VII or VIII building which has a rise of more than 2 storeys shall be a fire-isolated stairway.

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24.41 DIMENSIONS OF DOORWAYS

General requirements

(1) Subject to sub-regulations (2) and (3), a doorway which -

- (a) serves as a required exit from a storey; or
- (b) leads to or forms part of a required exit or path of travel to a required exit,

shall have an opening of not less than 1.98 m in height and not less than 760 mm in width.

Doorway which leads to street, &c., from storeys with large populations

(2) Where, under regulation 24.23, a storey at the level of access to a street or open space is calculated to accommodate more than 100 persons -

- (a) the width of a doorway which serves as the only exit; or
- (b) the sum of the widths of 2 or more doorways which serve as required exits,

from the storey, shall be not less than 760 mm plus 255 mm for every 25 persons, or part of 25 persons, by which the calculation is more than 100 persons.

Doorway which leads to or from stairway or ramp

(3) Where, under regulation 24.43, a stairway or ramp is required to be more than 1.02 m in width at any level, a doorway which leads to or from the stairway or ramp shall have a width of not less than -

- (a) where the doorway provides direct access from a storey - 255 mm less than the required width of the stairway or ramp at that storey level; and
- (b) where the doorway provides direct access from the stairway or ramp at the level of access to a street or open space - 255 mm less than the required width of the stairway or ramp at that level.

24.42 DIMENSIONS OF PATH OF TRAVEL

A path of travel to an exit shall, except for a doorway, have an unobstructed vertical clearance throughout of not less than 2.03 m and a minimum unobstructed width throughout of not less than 1.02 m.

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24.43 DIMENSIONS OF EXIT

Vertical clearance

(1) A required exit shall, except for a doorway, have an unobstructed vertical clearance throughout of not less than 2.03 m.

Minimum width

(2) Subject to sub-regulation (3), a required exit shall, except for a doorway, have an unobstructed width throughout of not less than 1.02 m.

Width to be sufficient to accommodate all persons in storey

(3) Where, under regulation 24.33, a storey is calculated to accommodate more than 100 persons but not more than 200 persons -

- (a) where only one required exit is provided - the width of the stairway or ramp which serves the storey; and
- (b) where 2 or more exits are provided - the sum of the widths of the 2 or more required stairways or ramps which serve the storey,

shall, at the level of entry from the storey, be not less than the relevant dimension set out in Table 24.43(3), in accordance with the number of persons so calculated to be accommodated in that storey and, where the number of persons calculated under that regulation to be accommodated in a storey is more than 200 persons, the width shall be 2.04 m plus 255 mm for each 25 persons, or part of 25 persons, by which the calculation is more than 200 persons.

Required width not to diminish in direction of travel

(4) The required width of a stairway or ramp shall not diminish in the direction of travel to a street or open space.

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TABLE 24.43(3)

WIDTH OF EXIT IN ACCORDANCE WITH NUMBER OF
PERSONS ACCOMMODATED IN STOREY

Number of persons accommodated in accordance with regulation 24.23		Aggregate width (m)
More than	Not more than	
	100	1.02
100	125	1.275
125	150	1.53
150	175	1.785
175	200	2.04

Division 4 - Class IX Buildings

24.44 APPLICATION

Unless the contrary intention appears, a reference in this Division to a building is a reference to a Class IX building.

24.45 EGRESS FROM CLASS IXa BUILDINGS AND SCHOOLS

The means of egress from -

- (a) a Class IXa building; or
- (b) a school,

shall be as required by the Building Controller after he has taken into account -

- (c) a report by the Director as to the suitability or otherwise of the means of egress proposed in the building or school;
- (d) the conditions, if any, to which the means of egress referred to in paragraph (c) should be subject as recommended in the report referred to in that paragraph; and
- (e) the requirements of Division 1 applicable to the building.

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24.46 CLASS IXb BUILDINGS

Application

(1) A reference in this regulation to a building is a reference to a Class IXb building, including a theatre and a public hall.

Part in second storey

(2) A part of a building situated in the second storey of the building and which -

(a) is designed, constructed or adapted to be used for assembly purposes such as -

(i) civil, political, transit, religious social or recreational purposes, and the like; or

(ii) entertainment or amusement; and

(b) has a floor area of 42 m² or more,

shall be provided with not less than 2 exits.

Stairways from third or higher storey

(3) Where a storey referred to in sub-regulation (2) of a building is situated on the third or a higher storey of the building, the storey shall be served by not less than 2 fire-isolated stairways.

Width of exits

(4) The exits referred to in sub-regulation (2) of a part of a building shall have an aggregate width not less than that calculated in the proportions of 510 mm for every 55 m² of floor area in the part but, in any case, no such exit shall be less than 1.02 m in width.

Dimensions of paths of travel

(5) A path of travel from a part of a building referred to in sub-regulation (2) to a required stairway shall, except for a doorway, have an unobstructed vertical clearance throughout of not less than 2.03 m and an unobstructed width throughout of not less than 1.02 m.

Dimensions of stairways

(6) Subject to sub-regulation (7), a required stairway in a building shall have an unobstructed width throughout of not less than 1.02 m.

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Storey which accommodates more than 100 persons

(7) Where, under regulation 24.23, a storey which contains a part referred to in sub-regulation (2) in a building is calculated to accommodate -

- (a) more than 100 persons but not more than 200 persons - the aggregate width of a required stairway in the building shall, at the level of entry from the storey, be not less than the relevant dimension specified in Table 24.43(3) in accordance with the number of persons calculated to be accommodated in the storey; or
- (b) more than 200 persons - the aggregate width of the required stairway in the storey shall, at the level of entry from that storey, be 2.03 m plus 255 mm for every 25 persons, or part of 25 persons, by which the calculation is more than 200 persons.

Doors fitted to certain exits

(8) Unless otherwise approved, a door fitted to an exit in a part referred to in sub-regulation (2) of a building shall -

- (a) be hung in 2 folds fitted with "panic" bolts;
- (b) be made to open outwards; and
- (c) not open immediately onto a flight of stairs but, where it does lead to a flight of stairs, have a landing between it and the flight of stairs.

Division 5 - Access and Egress for Handicapped Persons

24.47 ACCESS AND EGRESS FOR HANDICAPPED PERSONS

Accessibility of buildings to handicapped persons

(1) In a class of building specified in column 1 of Table 24.47(1), accessibility in accordance with AS 1428 and this regulation shall be established and maintained to the areas specified in column 2 of the table opposite the class of building so specified.

Grade of slope not more than 1 in 33

(2) Where the grade of a slope which provides access as required under sub-regulation (1) is not more than 1 in 33, a pathway shall be so designed and constructed as to prevent a wheelchair accidentally leaving either side of the pathway.

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Grade of slope between 1 in 20 and 1 in 33

(3) Where the grade of a slope which provides access as required under sub-regulation (1) is not more than 1 in 20 and not less than 1 in 33, a pathway shall be so designed and constructed as to prevent a wheelchair accidentally leaving either side of the pathway, and shall be provided with level rest areas, each not less than 1.2 m in length, at intervals of the pathway of not more than 18 m, calculated exclusive of any part of the pathway which, in accordance with this sub-regulation, constitutes part of a level rest area.

Grade of slope between 1 in 12 and 1 in 20

(4) Where the grade of a slope which provides access as required under sub-regulation (1) is not more than 1 in 12 and not less than 1 in 20, a ramp shall be designed and constructed so that -

- (a) subject to sub-regulation (6), a wall is provided on each side of the ramp with a handrail, a balustrade with a handrail or a kerb with a handrail continuous throughout its length;
- (b) a level rest area, not less than 1.2 m in length, is provided at each change, if any, of 45° or more in direction and at intervals of the ramp of not more than 9 m, calculated exclusive of any part of the ramp which, in accordance with this sub-regulation, constitutes part of a level rest area; and
- (c) the approach to the ramp -
 - (i) is level for a distance; and
 - (ii) has a width, of not less than 1.2 m.

Handrails

(5) A handrail referred to in sub-regulation (4)(a) shall -

- (a) have a grip not less than 40 mm in width and not more than 60 mm in width;
- (b) be not less than 865 mm in height and not more than 900 mm in height above the floor surface;
- (c) be securely fixed to a wall, rigid and have the end of a handrail returned away, or turned downwards, for not less than 100 mm from a flight of stairs;

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- (d) have a clear width between it and an adjacent wall surface of not less than 50 mm; and
- (e) be fixed to an adjacent wall so that there is no obstruction to the passage of the hand along the grip.

Alternative design for ramp

(6) Where either side of a ramp referred to in sub-regulation (4) is not bounded by walls, and it is not proposed to use rails or a balustrade design for the ramp, an alternative design may be submitted to the Building Controller and, if he is satisfied that the alternative design incorporates the conceptual features, convenience and safety as expressed or implied in sub-regulation (4), he may approve the alternative design.

Transition of pathway or ramp

(7) Where a pathway or ramp referred to in this regulation joins another pathway or ramp, or a driveway or parking area, the transition between the first-mentioned pathway or ramp and the second-mentioned pathway or ramp, or driveway or parking area, as the case may be, shall be effected without an abrupt change in level or camber.

Kerb incorporated in ramp

(8) Where a kerb is incorporated in a ramp referred to in this regulation, the kerb shall be not less than 100 mm in height.

Crowned or banked pathways and ramps

- (9) The camber of -
 - (a) a crowned or banked pathway; or
 - (b) a crowned or banked ramp,

referred to in this regulation, shall be not more than 1 in 100 in cross-section.

Finish of pathways and ramps

(10) The floor surface of a pathway or ramp referred to in this regulation, including a rest area, shall have a hard, level, non-slip finish throughout.

Doorways

(11) Subject to the requirements of this Code in relation to direct access to fire-isolated stairways, fire-isolated passageways or fire-isolated ramps, a doorway shall have a minimum effective opening distance of not less than 760 mm.

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Exemptions

(12) This regulation does not apply to or in relation to a ramp intended for the use of cars and provided for, to or within an open-deck parking station, public garage or other building used for the parking of cars.

TABLE 24.47(1)

ACCESS TO AND WITHIN BUILDINGS

Column 1		Column 2
Class of occupancy		Accessibility
III	Total number of units in the building	Number of units to which access is required
	10 to 24	1
	25 to 49	2
	50 to 74	3
	75 and over	4, and one additional unit for each 25, or part of 25, units more than 100
V and VI	To and within -	
	(a) the ground floor level where the area of that floor is more than 500 m ² in net area; and	
	(b) all storeys serviced by a passenger lift	
VII and VIII	To and within -	
	(a) the ground floor level where the aggregate floor area of the building (including all ancillary buildings, whether attached or not) is more than 3,000 m ² or, in the case of a laboratory, where the aggregate floor area is more than 500 m ² ; and	
	(b) all storeys serviced by a passenger lift	
Ixa	To and within all floor levels	

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TABLE 24.47(1) - continued

Column 1	Column 2
Class of occupancy	Accessibility
Ixb	To and within - (a) the ground floor level where that floor accommodates more than 100 persons (calculated in accordance with regulation 24.23); and (b) all storeys serviced by a passenger lift

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PART 25 - CHIMNEYS, FLUES, FIREPLACES, STOVES, &c.

25.1 APPLICATION

Unless the contrary intention appears, a reference in this Part to a chimney, flue, fireplace, stove, heating appliance or like feature is a reference to a chimney, flue, fireplace, stove, heating appliance or like feature that is situated within, or forms part of, a building.

25.2 INSTALLATION OF GAS BURNING APPLIANCES

A gas stove, gas heater or other gas-burning appliance shall be installed in accordance with AS 1596.

25.3 DOMESTIC-TYPE OIL-HEATING APPLIANCES

A domestic-type oil-heating appliance shall be provided with a flue, and the appliance, together with its flue, shall be installed in accordance with AS 1691.

25.4 DOMESTIC-TYPE SOLID-FUEL-BURNING APPLIANCES

A domestic-type solid-fuel-burning appliance shall be provided with a flue, and the appliance, together with its flue, shall be installed in accordance with AS 1691, as though it were, for the purpose of that installation, an oil-heating appliance, such that -

- (a) subject to rule 5.2.4 of that Australian Standard, the minimum distance between the appliance and any nearby combustible material complies with Table 5.1 of that Australian Standard;
- (b) where the case temperature of the appliance is not known - the case temperature of the appliance is, for the purposes of Table 5.1 of that Australian Standard, deemed to be more than 150°C; and
- (c) the flue is constructed of asbestos cement not less than 9.5 mm in thickness, cast iron or other approved material.

25.5 BOILERS

A boiler, together with its flue, if any, and other associated fittings, shall be installed in accordance with AS 1200.

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25.6 HEARTHES

Where hearth to be provided

- (1) An -
 - (a) open fireplace; and
 - (b) a solid-fuel-burning appliance in which the fuel-burning compartment is not enclosed,

shall be provided with a hearth.

Construction of hearth

(2) A required hearth shall be of stone, concrete, masonry or other like non-combustible material, and be constructed so that -

- (a) its upper surface does not slope away from the grate of the open fireplace or from the solid-fuel-burning appliance for which it is provided; and
- (b) combustible material situated below the hearth is not less than 155 mm in depth from the upper surface of the hearth, except that this paragraph does not apply to or in relation to combustible material, if any, below that part of the hearth which is required to extend beyond the opening of the open fireplace or the solid-fuel-burning appliance for which the hearth is provided.

Limits of hearth

- (3) A required hearth shall -
 - (a) extend not less than 300 mm beyond the front of the opening of the open fireplace or solid-fuel-burning appliance for which it is provided and not less than 150 mm beyond each side of that opening; and
 - (b) where the open fireplace or solid-fuel-burning appliance for which it is provided is free-standing from any wall of a room, unless otherwise approved - extend beyond the limits of the fireplace or appliance for a distance of not less than 300 mm.

25.7 SPECIAL REQUIREMENTS FOR CHIMNEYS AND FLUES

One flue per fireplace, &c.

(1) A flue shall not be used to convey the hot products of combustion from more than one fireplace or heating appliance except in the case of -

(a) gas-burning appliances which are permitted under AS 1596; or

(b) boilers which are permitted by AS 1200,

to be so used.

Position of terminal

(2) A flue or chimney shall not terminate in such a position as to constitute a risk of -

(a) fire to a nearby combustible material; or

(b) penetration of flue gases through a nearby window or other opening, fresh air inlet, mechanical ventilation inlet or exhaust, or the like.

Flues to extend for entire height

(3) Where a chimney contains more than one flue, each flue shall extend throughout the entire height of the chimney.

Fire-resistance of chimney and flue

(4) A chimney or flue shall be constructed so that -

(a) it is capable of withstanding the temperatures likely to be generated by the fireplace or heating appliance for which it is provided;

(b) the temperature of its exposed faces will not cause damage to the nearby parts of the building in which it is situated; and

(c) the hot products of combustion will not escape through its walls.

Certain flues deemed to comply with sub-regulation (4)

(5) A flue attached to a heating appliance referred to in regulation 25.2, 25.3, 25.4 or 25.5 and constructed in accordance with the requirements of the Australian Standard to which it is subject pursuant to that regulation shall be deemed to comply with sub-regulation (4).

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Certain chimneys in Classes I and X buildings deemed to comply with sub-regulation (4)

(6) An open fireplace and a chimney connected to it in a Class I or X building in which -

- (a) the walls which form the sides and back of the fireplace are, to not less than 300 mm in height above the underside of the arch or lintel, constructed in 2 separate leaves of solid masonry not less than 180 mm in total thickness, exclusive of any cavity;
- (b) concrete masonry is not used in the construction of the inner leaf of the masonry referred to in paragraph (a);
- (c) the walls of the fireplace and chimney above the level referred to in paragraph (a) are constructed of masonry units which have a net volume, exclusive of cored and like holes, of not less than 75% of their gross volume measured on the overall rectangular shape of the units, and which units are not less than 90 mm in thickness; and
- (d) the chimney has its flue lined internally to not less than 12 mm in thickness with rendering which consists of cement, lime and sand in the proportions of one part cement, 3 parts lime, and 10 parts sand by volume, or other approved material,

shall be deemed to comply with sub-regulation (4).

Evidence of compliance with sub-regulation (4)

(7) The Building Controller may, in relation to a chimney or flue which is not, under sub-regulation (5) or (6), deemed to comply with sub-regulation (4), require the production of evidence, satisfactory to him, showing that the chimney or flue complies with sub-regulation (4).

Combustible material in building

(8) Combustible material shall be situated not less than -

- (a) in the case of a heating appliance which has an output rating of not more than 15 kW - 90 mm;
- (b) in the case of an open fireplace or a heating appliance which has an output rating of more than 15 kW but not more than 88 kW - 100 mm; and

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- (c) in the case of a heating appliance which has an output rating of more than 88 kW - 280 mm,

from the inner face of a flue or opening for a heating appliance or open fireplace.

Damp-proof course and flashing

(9) A chimney shall be constructed with damp-proof courses and flashings so arranged as to prevent the penetration of rain-water to any part of the interior of the building in which the chimney is situated.

25.8 INCINERATOR ROOMS

Construction

(1) Where an incinerator is installed in a separate room within a building, the room shall be separated from other parts of the building by construction which has a fire-resistance rating of not less than one hour.

Construction of chimney and flue of incinerator

(2) The chimney or flue of an incinerator shall comply with the requirements of regulation 25.7 applicable to a chimney or flue, as the case may be.

Hopper in charging chute

(3) A hopper which gives access to a charging chute of an incinerator which is within or forms part of a building shall -

- (a) be non-combustible;
- (b) be gastight when closed;
- (c) be so designed as to return to the closed position automatically after use;
- (d) not be attached to a chute that connects directly to a flue except where the hopper is situated in the open air; and
- (e) not be situated in an exit.

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PART 26 - FIRE-RESISTANCE OF CLASS IX BUILDINGS
Reserved.

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PART 27 - FIRE-FIGHTING SERVICES AND APPLIANCES

27.1 FIRE MAINS

Connection of hydrants and hose reels

- (1) Where -
 - (a) a hydrant is installed -
 - (i) in a building;
 - (ii) on a site; or
 - (iii) on the roof of a building,
 - a fire main shall be provided to which the hydrant shall be connected; and
 - (b) a hose reel is installed in a building, the hose reel shall be connected to -
 - (i) a fire main; or
 - (ii) a water-service pipe installed in accordance with the requirements of Specification No. 27.1 applicable to such a pipe.

Fire main for fire-fighting purposes only

(2) A fire main shall not be designed, constructed or adapted for use for a purpose other than the supply of water for fire-fighting purposes.

Installation of fire main, &c.

(3) A fire main, fire pump and associated equipment shall be designed and installed in accordance with the requirements of Specification No. 27.1 applicable to them.

Booster connection

(4) Where required by the Director, a fire brigade booster connection shall be provided to a fire main and installed in accordance with the requirements of Specification No. 27.1 applicable to it.

Report of design and suitability of fire main, &c., from Director

(5) An applicant for building approval in relation to a building shall submit to the Building Controller a report from the Director to the effect that, in the Director's opinion -

- (a) each fire main in the building meets the requirements of Specification No. 27.1 applicable to it;

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- (b) each hydrant in the building is accessible and suitable for use in conjunction with the fire hoses of the fire brigade which serves the locality in which the building is situated; and
- (c) a booster, if any, and its connections in the building are satisfactory.

27.2 HOSE REELS

Situation of hose reels

(1) Subject to sub-regulation (2), where a building is a member of a class of building specified in column 1 of Table 27.2(1), hose reels shall, in accordance with the requirements specified in column 2 of the table opposite the class of building so specified, be installed in the storeys of the building.

Hose reels in sole-occupancy unit which has rise of 2 or more storeys

(2) Where a sole-occupancy unit which has a rise of 2 storeys or more is included in a building, the requirements of Table 27.2(1) applicable to and in relation to the sole-occupancy unit shall be deemed to have been met where a hose reel is installed at the level of one only of those storeys and -

- (a) no point on a floor in the sole-occupancy unit is beyond the reach of the nozzle of the hose reel where the hose reel is fully extended; and
- (b) the use of the hose reel does not involve it traversing a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp.

Construction and installation of hose reels

(3) Where a hose reel is installed in a storey of a building, the hose reel shall -

- (a) be designed and installed in accordance with -
 - (i) the requirements of Specification No. 27.1 applicable to it; and
 - (ii) AS 2441;
- (b) comply with AS 1221; and

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(c) subject to sub-regulation (2), be situated so that -

- (i) no point on the floor of the storey is beyond the reach of the nozzle of the hose reel where the hose reel is fully extended; and
- (ii) not less than one hose reel is accessible to all occupants of that part of the storey served by it, except that the use of the hose reel shall not involve it traversing a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp.

Exemption in certain areas

(4) The Building Controller may exempt a building otherwise subject to the requirements of this regulation where -

- (a) a public water supply is not available; and
- (b) a water supply other than a public water supply is not, or cannot reasonably be made, available for connection,

to the building.

TABLE 27.2(1)

BUILDINGS IN WHICH HOSE REELS ARE
REQUIRED IN CERTAIN STOREYS

Column 1	Column 2
Classification of building	Storeys where hose reels are required
II	Where the rise in storeys includes not less than 4 residential storeys - every storey
III	Where the rise in storeys includes not less than 3 residential storeys - every storey

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TABLE 27.2(1) - continued

Column 1	Column 2
Classification of building	Storeys where hose reels are required
IV, V, VI, VII, VIII and IX	(a) Where the rise in storeys is 5 or more - every storey (b) Every storey which is more than 500 m² in floor area
Buildings with parts of 2 or more classifications -	
(a) where a storey is more than 500 m ² in floor area;	In that storey
(b) where one part is of Class II;	Where the rise in storeys is 4 or more - every storey
(c) where one part is of Class III;	Where the rise in storeys is 3 or more - every storey
(d) where there is no Class II or Class III part	Where the rise in storeys is 5 or more - every storey

27.3 HYDRANTS

Situation of hydrants

(1) Where a building is a member of a class of building specified in column 1 of Table 27.3(1), hydrants shall, in accordance with the requirements specified in column 2 of the table opposite the class of building so specified, be installed in the storeys of the building.

Buildings with 2 or more classifications

(2) Where a building contains parts of different classifications, it shall, for the purpose of this regulation, be deemed to be an entire building with that classification of its parts which is subject to the most stringent requirements under Table 27.3(1).

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Certain sole-occupancy units

(3) Where a sole-occupancy unit which has a rise of 2 or more storeys is included in a building, the requirements of Table 27.3(1) applicable to and in relation to the sole-occupancy unit shall be deemed to have been met where a hydrant is installed at the level of one only of the storeys, except that no point on a floor or a storey of the sole-occupancy unit shall be more than 36 m from the hydrant.

Distance from hydrants in building

(4) No point on the floor of a mezzanine or storey in a building referred to in sub-regulation (1) shall be more than 36 m from a hydrant.

Hydrants at roof level of certain buildings

(5) A building which has a rise of more than 6 storeys shall, in addition to complying with sub-regulation (1), have not less than one hydrant at the level of its roof, other than a roof -

- (a) which has a pitch of more than 10°; or
- (b) of a plant room or other subsidiary structure constructed on or above the level of the main roof of the building,

and a hydrant so required shall be situated so that no point on the roof for which it is provided is more than 36 m from the hydrant.

Distance of buildings from hydrants

(6) Where an application for building approval is made to construct a building -

- (a) in an area where a public water supply is available; and
- (b) on a site which is outside a radius of 90 m from any hydrant, whether any such hydrant is situated in the street to which the building has frontage or on the site of the building,

and -

- (c) the Building Controller is of the opinion that a community risk could arise as a result of the absence of a hydrant within a radius of 90 m from the building,

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the Building Controller shall -

- (d) refer the matter to the Director with a request that the Director prepare and forward to the Building Controller a report on that matter; and
- (e) after receiving the report referred to in paragraph (d) - determine the nature of the water supply to be provided for fire-fighting purposes for the building.

External hydrants to be provided in certain cases

(7) Where -

- (a) a hydrant is required to be installed within a building; and
- (b) each entrance to the building is more than 90 m from a hydrant situated in the street to which the site of the building has frontage,

one or more hydrants shall be provided additionally on the site, but external to the building, the number and situation of such additional hydrants to be determined by the Building Controller after consultation with the Director.

Measurement of distances from hydrants

(8) For the purposes of this regulation, the distance of a point on a floor of a building from a hydrant shall be measured -

- (a) where the point is in a storey which provides direct access to the hydrant - in a straight line between the hydrant and the point; and
- (b) where the point is in a storey other than a storey referred to in paragraph (a) - by adding together the distance -
 - (i) in a straight line, between the hydrant and the nearest stairway or ramp leading to the storey;
 - (ii) between the landing of the stairway or ramp at the level of access to the hydrant and the landing of the storey, the distance being measured, in the case of stairways, along the nosings of the treads; and
 - (iii) in a straight line, from the landing of the storey to the point.

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Use by fire-fighting personnel

- (9) A hydrant shall be -
 - (a) designed and installed in accordance with the requirements of Specification No. 27.1 applicable to it; and
 - (b) situated in an approved position that is -
 - (i) accessible to fire-fighting personnel; and
 - (ii) in the case of a building which has a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp -
 - (A) not more than 3 m from the doorway to; but
 - (B) not within the confines of, the fire-isolated stairway, fire-isolated passageway or fire-isolated ramp.

Exemption

(10) The Building Controller may exempt a building otherwise subject to the requirements of this regulation where -

- (a) a public water supply is not available to; and
- (b) a water supply other than a public water supply is not, or cannot reasonably be made, available for use on the site of,

the building.

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TABLE 27.3(1)

BUILDINGS IN WHICH HYDRANTS ARE REQUIRED

Column 1	Column 2
Classification of building or part of building	Where hydrants are required
II, III, IV, V, VI, VII, VIII and IX	Where rise in storeys of the building is 5 or more, regardless of floor area - every storey
	Each storey the total floor area of which is more than -
VI	2,000 m ²
VII	
(a) for storage or display of goods not referred to in Appendix A to AS 2665	3,000 m ²
(b) For storage or display of goods referred to in Appendix A to AS 2665	2,000 m ²
VIIIa	3,000 m ²
VIIIb	2,000 m ²
IX, excluding schools	2,000 m ²
Schools	3,000 m ²

27.4 SPRINKLERS

Sprinklers in buildings more than 25 m in height

(1) Where the floor of the topmost storey of a building, excluding a storey which contains only heating, ventilating, lift or other equipment, water tanks, or like service units, is more than 25 m above the floor of the

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lowest storey of the building which provides egress to a street or open space, an approved automatic sprinkler system shall be installed throughout the building.

Sprinklers in Class VI buildings of certain floor areas

(2) Where the sum of the floor areas of the Class VI part, if any, of a building is more than 3,500 m², an approved automatic sprinkler system shall be installed throughout the building unless the Building Controller, upon the receipt from the Director of a report stating that sprinklers are not required in the building, otherwise approves.

Connection of sprinkler alarm to fire station

(3) An automatic sprinkler system referred to in sub-regulation (1) or (2) shall -

- (a) be fitted with an externally mounted approved water motor alarm, except that, where alarm valves are grouped, one water motor alarm may serve up to 4 installations and the water motor alarm shall be situated as near as practicable to the alarm valve; and
- (b) provide for the automatic transmission of a distinctive alarm signal to an approved fire brigade station, unless the station is -
 - (i) not constantly manned; or
 - (ii) situated at such a distance from the building as would, in the opinion of the Building Controller, acting with the advice of the Director, prevent early and effective response to the alarm.

Conditions to be met for automatic transmission of alarm signal

(4) Where provision is required under sub-regulation (3) for the automatic transmission of a distinctive alarm signal to an approved fire brigade station -

- (a) and a connection to the fire brigade station is severed - attention shall be drawn to that fact at the fire brigade station and also when the connection is re-established;
- (b) a permanently affixed notice shall be situated in close proximity to the control valves of the alarm system to indicate -
 - (i) that there is a direct alarm connection to the fire brigade station; and
 - (ii) the action referred to in paragraph (a);

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- (c) the alarm signal transmission system shall comply with AS 1670 and AS 3000; and
- (d) for the purposes of alarm signal transmission, the control valves of not more than 4 installations may be grouped, provided that each installation is fitted with an approved mechanical indicating device, and a permanently affixed notice is situated in close proximity to the control valves to indicate the zone controlled by each set of valves.

27.5 PROVISION FOR SPECIAL HAZARDS

Reference to Director

(1) Where the Building Controller is of the opinion that, in a particular building wholly or partly a Class VI, VII, VIII or IX building, special fire-fighting problems could arise because of -

- (a) the nature or quantity of materials -
 - (i) stored or displayed; or
 - (ii) used in a handicraft or process, in the building;
- (b) the situation of the building in relation to a water supply for fire-fighting purposes; or
- (c) the use of the building for such a classification,

the Building Controller shall refer the proposal to the Director for a report from the Director as to the nature of special requirements, if any, that are desirable to facilitate the fighting of fire in the building and the Director shall, accordingly, provide the report to the Building Controller.

Imposition of special requirements

(2) After the Building Controller considers a report referred to in sub-regulation (1), he may impose such special requirements to facilitate fire-fighting as he considers necessary for and in relation to the building the subject of the report.

27.6 WATER SUPPLY

A water service or water storage which supplies fire mains, hydrants and hose reels shall comply with the requirements of Specification No. 27.1 applicable to it.

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27.7 FIRE CONTROL ROOMS IN CERTAIN BUILDINGS

Where the floor of the topmost storey of a building, excluding a storey which contains only heating, ventilating, lift or other equipment, water tanks or like service units, is more than 42 m in height above the floor of the lowest storey in the building which provides egress to a street or open space, a fire control room, constructed in accordance with the requirements of Specification No. 27.7, shall be provided in the building.

27.8 COMMUNICATION SYSTEM

Where communication system is required

(1) Where a means of exit is required from a building to which access is required in accordance with regulation 24.47, and the building is serviced in accordance with regulation 55.5 by a lift, a communication system shall be provided at each floor of the building.

Director may require communication system

(2) The Director may direct that a communication system be installed in a building to which access is required under regulation 24.47, regardless of whether the building is serviced in accordance with regulation 55.5 by a lift.

Compliance with regulation 55.11

(3) A communication system required under sub-regulation (1) or (2) shall comply with regulation 55.11.

27.9 PROVISION OF PORTABLE FIRE EXTINGUISHERS

Compliance with Australian Standard

(1) A portable fire extinguisher required by this regulation shall comply with -

- (a) AS 1841;
- (b) AS 1842;
- (c) AS 1844;
- (d) AS 1845;
- (e) AS 1846;
- (f) AS 1847; or
- (g) AS 1848.

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Compliance with other Australian Standards

(2) A portable fire extinguisher referred to in sub-regulation (1) shall comply with -

(a) AS 1849; and

(b) AS 1850.

Where required

(3) Where hose reels are not required in a Class III, V, VI, VII or VIII building, the Building Controller may, after he considers a report by the Director on the matter, require the provision in the building of such number and type of portable fire extinguishers, and in such positions, as he thinks fit but, in any case, not less than one for each 200 m² of floor area or part of 200 m² of floor area of the building.

Special risks

(4) Where hose reels are required in a building, portable fire extinguishers shall be provided in such parts of the building which, in the opinion of the Building Controller, are of special risk, the fire extinguishers to be of such number, type and in such positions as are required by the Building Controller after consultation with the Director.

Installation

(5) A portable fire extinguisher referred to in sub-regulation (4) shall be installed in accordance with AS 1851 Part 1.

27.10 INSTALLATION, &c., OF FIRE DETECTION AND SUPPRESSION EQUIPMENT

Tests, &c., to be carried out on equipment

(1) Where a building is required to be provided with fire detection or suppression equipment, the builder of the building shall, after the equipment is installed, carry out, in a manner approved by the Director, inspections and tests of the equipment and, after the completion of such inspections and tests, submit to the Director a report in writing on the results of those inspections and tests, including evidence that those inspections and tests have been carried out.

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Issue of certificate in relation to equipment

(2) Where the Director receives a report under sub-regulation (1) and is satisfied that the results of the inspections and tests to which the equipment the subject of the report has been subjected shows that that equipment is in good working order, he shall issue to the builder who made the report a certificate to the effect that he is so satisfied with that equipment.

Notice requiring work to be carried out

(3) Where the Director receives a report under sub-regulation (1) and is not satisfied that the results of the inspections and tests to which the equipment the subject of the report has been subjected shows that that equipment is in good working order, he shall issue to the builder who made the report a notice which specifies the work to be carried out on that equipment in order to so make it satisfactory and the builder shall, accordingly, carry out the work specified in the notice and make a further report under sub-regulation (1) in relation to that work.

Copy of certificate to Building Controller

(4) The builder to whom a certificate under sub-regulation (2) is issued shall forward a copy of that certificate to the Building Controller as soon as practicable after its receipt by the builder.

Certificate of occupancy not issued until equipment complies

(5) Where a certificate of occupancy is required to be issued in relation to a building referred to in sub-regulation (1), the Building Controller shall not issue that certificate until he is in receipt of a copy of the certificate, if any, issued under sub-regulation (2) in relation to the building.

27.11 VARIATION OF REQUIREMENTS

The Building Controller may exempt a building from any or all of the requirements of this Part upon the receipt of a report from the Director which recommends the exemption, subject to compliance with such alternative requirements, if any, as are specified in the report.

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SPECIFICATION No. 27.1

FIRE MAINS, CERTAIN WATER SERVICE PIPES, HYDRANTS,
HOSE REELS AND WATER STORAGE

Division 1 - Fire Mains and Certain Water Pipes

1. DESIGN OF FIRE MAIN TO SERVE HYDRANTS

Where a fire main serves one or more hydrants, it shall be designed so that -

- (a) in the case of -
 - (i) a single hydrant served - the water flow rate is not less than 22 L/s; and
 - (ii) 2 or more hydrants served - the 2 most hydraulically disadvantaged hydrants, where operating simultaneously, each provide a water flow rate of not less than 11 L/s, at a running water pressure of 275 kPa;
- (b) the running water pressure at each hydrant is not more than 650 kPa; and
- (c) the fire main -
 - (i) subject to sub-paragraph (ii), is not less than 100 mm in diameter; and
 - (ii) is not less than 150 mm in diameter where -
 - (A) 2 or more hydrants per storey are connected to the fire main and the floor of the topmost storey, excluding a storey which contains only heating, ventilating, lift or other equipment, water tanks or like service units, of the building is more than 25 m in height above the floor of the lowest storey which provides egress to a street or open space; or
 - (B) the topmost storey, excluding a storey which contains only heating, ventilating, lift or other equipment, water tanks or like service units, of the building is more than 60 m in height above the floor of the lowest storey which provides egress to a street or open space, except that a branch of the fire main at any level of the building may, notwithstanding this sub-paragraph, be reduced to not less than 100 mm in diameter.

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2. DESIGN OF FIRE MAIN, &c., TO SERVE HOSE REELS

Where a fire main, or a water service pipe used instead of a fire main, serves hose reels, it shall be designed and installed so that the upstream end of the nozzle at the connection to the most hydraulically disadvantaged hose, where fully extended, has a running water pressure of not less than 200 kPa.

3. ALTERNATIVE DESIGN WHICH SERVES HOSE REELS ONLY

Where a water service pipe is used instead of a fire main to serve hose reels in a building, it shall be -

- (a) tapped into the water supply service for the building and so arranged that isolating valves within the domestic water supply service, other than an isolating valve, on the site of the building, designed to cut off supply to the whole building, where in operation, do not interrupt the continuity of supply to the hose reels;
- (b) designed to enable hose reels connected to it to comply with regulation 27.2(3); and
- (c) installed so that no action of the water meter inhibits the flow of water.

4. PORTABLE PUMPS

The design and operation of fire-fighting services shall not rely on the use of a portable pump to meet a requirement of this Specification.

5. DISPOSAL OF FUMES

Provision shall be made to convey exhaust fumes from fire brigade relay pumps to the outside air by means of a metal pipe which -

- (a) is not less than 75 mm in internal diameter, set so that at every part it slopes downwards towards the outlet;
- (b) has an inlet -
 - (i) mounted not less than 750 mm in height above the finished floor level;
 - (ii) situated not more than 3 m from the hydrant pumping point; and
 - (iii) fitted with an approved cap of the lugged type; and

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- (c) has its situation clearly indicated by a sign affixed to or painted on the wall adjacent to the inlet referred to in paragraph (b) with the words "FIRE BRIGADE RELAY PUMP EXHAUST OUTLET" in letters whose colour contrasts with that of their background.

6. TEST COCK

For the purposes of testing the required running water pressure of a hydrant or hose reel, a 6 mm test cock with a lever handle and a pressure gauge shall be provided on a fire main adjacent to the hydrant or hose reel.

7. FIRE BRIGADE BOOSTER CONNECTION FIRE PUMP BY-PASS

Provision shall be made in a fire main installation for the water supply from a fire brigade booster connection to by-pass a fire pump, if any, installed between the fire brigade booster connection and a hydrant.

8. WHERE FIRE PUMPS REQUIRED

Where the required running water pressure cannot be achieved at all times by the normal water supply, a self-priming fire pump shall be connected to -

- (a) a fire main which serves hydrants;
- (b) a fire main, or water service pipe used instead of a fire main, which serves hose reels; or
- (c) a water storage tank,

in order to so achieve the required running water pressure.

9. HOSE REEL FIRE PUMPS

A fire pump for a hose reel shall -

- (a) be self-priming;
- (b) have a capacity to supply water at a rate of not less than 1 L/s at the required running water pressure; and
- (c) operate automatically upon flow through a hose reel.

10. CONTROL ON FIRE PUMPS

A fire pump fitted to a fire main which serves hydrants shall be started automatically on the operation of a hydrant within the building for which the fire pump is provided, and shall have -

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- (a) manual start and stop buttons situated adjacent to the pump and clearly marked "FIRE PUMP START" and "FIRE PUMP STOP";
- (b) an indicator which clearly shows -
 - (i) where the pump is not in operation - the word "AUTOMATIC"; and
 - (ii) where the pump is in operation - the words "FIRE PUMP RUNNING"; and
- (c) all controls and indicators repeated at each -
 - (i) fire control room; and
 - (ii) fire indicator board,

associated with the building, if any,

and, where there is no fire control room or fire indicator board associated with the building, a separate control panel with a key-operated switch which controls the functions required by this regulation shall be provided adjacent to the main entrance to the building.

11. NON-RETURN VALVES

Where fire mains are charged by fire brigade pumps, non-return valves shall be fitted to all supply mains from -

- (a) water storage tanks;
- (b) the public water supply; or
- (c) any other source.

12. INSTALLATION OF BOOSTER

A fire brigade booster connection installation shall -

- (a) be enclosed in a weatherproof cabinet -
 - (i) of sufficient size to contain all necessary equipment;
 - (ii) which permits ease of operation of the equipment; and
 - (iii) the door of which -
 - (A) is fitted with an approved lock; and

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- (B) has a sign affixed to or painted on the door with the words "FIRE BRIGADE BOOSTER CONNECTION" in letters not less than 50 mm in height whose colour contrasts with that of their background;
- (b) be situated on the site external to the building for which it is provided approximately 750 mm in height above the ground level of the site;
- (c) be situated so that the fire brigade pump appliances can be brought within sight of, and not more than 8 m from, it;
- (d) have such control valves as may be fitted to it, designed so that the valves -
 - (i) are wheel-operated full-flow gate valves;
 - (ii) open by counter-clockwise rotation;
 - (iii) are locked in the open position, except where repair or maintenance is being carried out; and
 - (iv) are so situated within the cabinet to permit easy removal of the blank caps and ready operation of the valves;
- (e) where the fire main for which it is provided is -
 - (i) not more than 100 mm in diameter - be fitted with 2 inlets;
 - (ii) more than 100 mm in diameter but not more than 150 mm in diameter - be fitted with 4 inlets; and
 - (iii) more than 150 mm in diameter - be fitted with such number of inlets as determined by the Director;
- (f) have couplings suitable for connection to the appliances of the fire brigade which serves the locality in which the booster connection is situated;
- (g) permit the fire main for which it is provided to be pressurized without the need to operate control valves; and
- (h) be fitted with a pressure gauge 0 - 2 MPa.

13. ELECTRIC FIRE PUMP

Installation of power supply

(1) An electrically driven fire pump fitted to a fire main shall have its power supply installed so that -

- (a) electrical supply is from the supply side of a main disconnection switch for the building for which the pump is provided;
- (b) a switch in the power circuit is locked "ON" and clearly identified with a permanently affixed notice, situated in close proximity to the switch, labelled "FIRE HYDRANT BOOSTER PUMP - NOT TO BE SWITCHED OFF";
- (c) electrical wiring complies, and is installed in accordance, with AS 3000; and
- (d) electrical wiring to the electric motor and related remote control switch is installed in a fire-resisting enclosure which has a fire-resistance rating of not less than one hour.

Where sub-clause (1)(d) satisfied

(2) The requirements of sub-clause (1)(d) are satisfied where the wiring referred to in that sub-clause is -

- (i) enclosed in a duct which has a fire-resistance rating of not less than one hour;
- (ii) mineral-insulated copper-sheathing with copper conductors and an electrical rating of not less than 1 kV, with the sheath continuous, without intermediate terminations, through any fire compartment; or
- (iii) polyvinyl chloride insulated cable enclosed in polyvinyl chloride or mild steel conduit buried in concrete with a cover of not less than 50 mm.

Water storage system which incorporates electric fire pump

(3) Where a water storage system incorporates an electrically driven fire pump, the Building Controller may require the pump to have a dual electric power supply controlled by an automatically resetting switching device.

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Division 2 - Hydrants

14. ACCESSIBILITY

A hydrant shall be installed -

- (a) approximately 750 mm in height above ground or floor level;
- (b) in a situation where it has sufficient clearance to be easily accessible for the operation of the valve and connection of a fire hose; and
- (c) so that its valve outlet -
 - (i) is at right angles to the face of the wall, if any, immediately behind the hydrant;
 - (ii) is horizontal or sloping not more than 350° below the horizontal; and
 - (iii) has, where appropriate, the single twist-release lug uppermost.

15. FITTINGS OF HYDRANTS

A hydrant shall -

- (a) have a copper-alloy wheel-operated valve designed to open by counter-clockwise rotation; and
- (b) be fitted with couplings suitable for connection to the appliances of the fire brigade which serves the locality in which the hydrant is situated.

16. PILLAR HYDRANTS

Where pillar hydrant, &c., required

(1) Subject to sub-clause (2), a pillar hydrant shall -

- (a) be provided on a supply fire main which terminates within the fire brigade booster connection cabinet;
- (b) have a corresponding number of delivery outlets to connector inlets required for the fire brigade booster connection; and
- (c) where the fire main is -
 - (i) not more than 100 mm in diameter - be fitted with 2 outlets;

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- (ii) more than 100 mm but not more than 150 mm in diameter - be fitted with 4 outlets; and
- (iii) more than 150 mm in diameter - be fitted with such number of inlets as determined by the Director.

Where pillar hydrant not required

(2) Where a street hydrant of suitable dimensions is located within 60 m of a fire brigade booster connection, a pillar hydrant is not required.

17. ACCESSIBILITY OF CABINETS OR RECESSES

A recess or cabinet which contains a hydrant shall -

- (a) be conspicuous and readily accessible;
- (b) have its situation clearly indicated by a sign with the words "FIRE HYDRANT" in letters not less than 50 mm in height whose colour contrasts with that of their background and affixed to or painted on -
 - (i) the enclosing doors, if any, of;
 - (ii) the wall adjacent to, the recess or cabinet;
- (c) where enclosed by doors - be capable of being opened without the use of a key; and
- (d) not be used for a purpose other than the housing of equipment associated with the fire-fighting services in the building for which it is provided.

Division 3 - Hose Reels

18. SITUATION OF HOSE REELS

Where hose reels and hydrants are connected to the same fire main, they shall be installed in the same situation.

19. ACCESSIBILITY OF HOSE REELS

Installation and type of hose reels

- (1) A hose reel provided in a recess or cabinet shall -
 - (a) be so installed that, where required for use, the hose reel will swing freely out of the recess or cabinet where the hose is unwound;

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- (b) be of -
 - (i) the swing type;
 - (ii) a fixed type carried in a swing cradle; or
 - (iii) a door-mounted type; and
- (c) comply with AS 1221.

Mounting of hose reel

(2) The mounting height above floor level of a hose reel assembly, nozzle assembly and stop valve shall comply with AS 1851 Part 2.

20. HOSE REELS IN RECESSES OR CABINETS

A recess or cabinet which contains a hose reel in a building shall -

- (a) be conspicuous and readily accessible;
- (b) have its situation clearly indicated by a sign with the words "HOSE REEL" in letters not less than 50 mm in height whose colour contrasts with that of their background and affixed to or painted on -
 - (i) the enclosing doors, if any of; or
 - (ii) the wall adjacent to,
the recess or cabinet, as the case may be;
- (c) where enclosed by doors - be capable of being opened without the use of a key; and
- (d) not be used for a purpose other than the housing of equipment associated with the fire-fighting services in the building.

Division 4 - Water Storage

21. WATER STORAGE SYSTEM IN CERTAIN BUILDINGS

Where the floor of the topmost storey of a building, excluding a storey which contains only heating, ventilating, lift or other equipment, water tanks, or like service units, is more than 25 m in height above the floor of the lowest storey which provides egress to a street or open space, a water-storage system which comprises one or more tanks, with a combined water storage capacity of not less than 40,000 litres, together with any necessary pressure reduction valves, shall be installed to serve the fire main in the building.

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22. WATER STORAGE IN CERTAIN AREAS

Where a normal water service is not available in sufficient supply or pressure to provide the water flow rates required in a fire main in a building, the Building Controller may, after obtaining a report from the Director on the matter, require the provision in the building of a water-storage tank with a capacity of not less than 40,000 litres.

23. INSTALLATION

A water-storage system referred to in clause 22 shall be designed and installed in the building for which it is to be provided so that, in the event of a fire occurring in a storey of the building, it is capable of supplying to that storey a volume of water not less than that of its required capacity referred to in that clause.

24. BREAK TANK

Where a break tank is installed in a building, it shall have -

- (a) an effective water storage capacity of not less than 25,000 litres;
- (b) the capacity and general arrangement of -
 - (i) suction pipe; and
 - (ii) tank and sump,
installed as required for pump suction tanks in AS 2118; and
- (c) a water make-up rate not less than the draw-off rate.

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SPECIFICATION No. 27.7

FIRE-CONTROL ROOMS

1. PURPOSES OF FIRE-CONTROL ROOM

A fire-control room in a building shall -

- (a) provide a fire-isolated area from which fire-fighting operations or other emergency procedures can be directed and controlled;
- (b) contain such controls, valves, plant, equipment, switches, indicator panels, telephones and the like associated with the required services in the building as the Building Controller, acting with the advice of the Director, thinks fit; and
- (c) not be used for a purpose other than the control of -
 - (i) fire-fighting activities; and
 - (ii) other safety measures which concern the occupants of the building in the case of an emergency.

2. CONSTRUCTION OF FIRE-CONTROL ROOM

A fire-control room in a building shall be constructed so that -

- (a) its enclosing construction has a fire-resistance rating of -
 - (i) not less than 2 hours; or
 - (ii) such greater fire-resistance rating, if any, as is otherwise required;
- (b) its enclosing construction is of concrete or masonry;
- (c) a ceiling, partition, bulkhead or the like constructed within the room is of non-combustible material; and
- (d) a material used as a finish, surface, lining or the like, or as an attachment, within the room complies with the requirements of regulation 16.17 applicable to a fire-isolated stairway.

3. CERTAIN SERVICES, &c., NOT PERMITTED

Services, pipes, ducts and the like that are not directly required for the proper functioning of a fire-control room shall not pass through the room.

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4. LIMITATIONS ON OPENINGS IN FIRE-CONTROL ROOMS

Openings in the walls, floors or ceilings of a fire-control room, where such walls, floors or ceilings separate the room from the interior of the building in which the room is situated, shall be not other than -

- (a) a doorway;
- (b) an opening for metal pipes, metal conduits, metal ducts and the like required for the proper functioning of the services contained in the room; or
- (c) a ventilation opening in accordance with clause 8.

5. PROTECTION OF OPENINGS IN FIRE-CONTROL ROOMS

An opening permitted under clause 4 in a fire-control room shall be protected so that -

- (a) where a wall of a fire-control room is an external wall of a building and the wall faces a street or open space - such an opening for a window, doorway, ventilation, and for a service pipe, conduit and the like associated with the functions of the fire-control room, is protected in accordance with the requirements of regulation 22.4 applicable to it, regardless of whether or not the opening is an opening in an external wall situated in a fire zone;
- (b) such an opening for a door in the internal walls which enclose the room is fitted with a self-closing fire door with a fire-resistance rating of not less than 2 hours;
- (c) such an opening associated with natural or mechanical ventilation is -
 - (i) not made in a ceiling or floor immediately above or below the room; and
 - (ii) where provided for a duct that penetrates a wall required to have a fire-resistance rating, other than a wall that divides the room from the outside air - protected by a fire damper with a fire-resistance rating of not less than 2 hours.

6. SITUATION OF FIRE-CONTROL ROOMS

Egress from fire-control room to street or open space

(1) A fire-control room shall be situated in a building so that egress from any point on the floor of the room to a street or open space does not involve changes in level the aggregate of which is more than 300 mm.

Situation of doors in fire-control rooms in relation to exits

(2) A door from a fire-control room that does not open directly onto a street or open space shall be situated not more than 3 m from an exit of the building for which the room is provided.

Doors in fire-control rooms not to be obstructed

(3) A door to a fire-control room shall not be situated in such a manner that persons using the exits from the building for which the room is provided will obstruct or hinder access to the room.

7. AREA AND LAYOUT OF FIRE-CONTROL ROOM

The area and layout of a fire-control room shall be as approved after the receipt by the Building Controller of a report from the Director on the adequacy of the area and layout of the room.

8. VENTILATION

A fire-control room in a building shall be ventilated by -

- (a) natural ventilation from a window or doorway in an external wall of the building where the window or doorway opens directly into the room from a street or open space; or
- (b) a pressurizing system which -
 - (i) is installed in accordance with AS 1668 Part 1, as though, for that purpose, the room were a fire-isolated stairway;
 - (ii) serves the room only;
 - (iii) is activated automatically by the operation of -
 - (A) the alarm system; or

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(B) the air-handling plant sensors,

installed within the building and, where so activated, has, in addition to the pressurization requirements, a volumetric flow rate of fresh air of not less than 1.2 litres/s.m.²;

(iv) has its fans, motors and ductwork that form part of the system, but are not contained within the room, protected by an enclosing construction which has a fire-resistance rating of not less than 2 hours; and

(v) has its electrical supply connected to the supply side of the main disconnection switch for the building and which electrical service consists of copper-sheathed mineral-insulated cable with copper conductor,

and shall have no openable window or other openable device, other than required doorways, pressure-controlled relief louvres and windows, openable by a key, constructed in the room.

9. SECURITY OF FIRE-CONTROL ROOM

The door of a fire-control room shall be kept locked, one key for the lock being lodged with the Director.

10. SIGN ON FIRE-CONTROL ROOM

The external face of a door to a fire-control room shall have a sign with the words "FIRE-CONTROL ROOM" in letters not less than 50 mm in height whose colour contrasts with that of their background affixed to or painted on the door.

11. LIGHTING OF FIRE-CONTROL ROOM

Lighting provided to a fire-control room shall consist of -

(a) artificial lighting which has its electrical service connected to the supply side of the main disconnection switch for the building and which electrical service consists of copper-sheathed mineral-insulated cable with copper conductor; and

(b) alternative lighting which complies with regulation 55.8(4) and (5).

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12. NO INTERNAL COMBUSTION ENGINE TO BE IN FIRE-CONTROL ROOM

An internal-combustion engine shall not be situated in a fire-control room.

13. AMBIENT SOUND LEVEL OF FIRE-CONTROL ROOM

The ambient sound level within a fire-control room, measured when all the equipment in the room is operating in the manner in which it is designed to operate in an emergency, shall not exceed 65 dB(A), as determined in accordance with AS 2107.

14. EXEMPTIONS

The Building Controller may, upon receipt of a report from the Director, exempt a fire-control room from any or all of the requirements of this Specification.

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PART 28 - MATERIALS

28.1 MATERIALS

Where a material specified in column 1 of Table 28.1 complies with the Australian Standard specified in column 2 of the table opposite the material so specified, the material shall not be faulty within the meaning of regulation 10.2(1)(a).

TABLE 28.1

Column 1	Column 2
Material	Australian Standard
Blocks - concrete	AS 1500
Bricks - burnt clay and shale	AS 1225 and AS 1226
Bricks - calcium silicate	AS 1653
Bricks - concrete	AS 1346
Concrete - plain	AS 1480
Concrete - prestressed	AS 1481
Concrete - reinforced	AS 1480
Metal sheet roofing corrugated	AS 1445
Metal sheet roofing without transverse laps	AS 1562
Mortar - masonry (brickwork)	Appendix A to AS 1640
Mortar - masonry (other)	AS A123
Particleboard flooring	AS 1859

28.2 OTHER MATERIALS

Where it is proposed to use in the structure of a building a material not otherwise provided for in this Code, the Building Controller may require evidence, in accordance with regulation 10.3(2), that the material is not faulty within the meaning of regulation 10.2(1)(a).

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PART 29 - STRESSES AND LOAD FACTORS

29.1 STRESSES, DEFLECTIONS AND LOAD FACTORS ON SPECIAL MATERIALS

The working stresses, deflections and load factors used for materials or forms of construction for which provision is not otherwise made in this Code shall be as approved.

29.2 LOADING NOTICE PLATES

Where notice plate required

(1) After the completion of a Class V, VI, VII or VIII building, but before occupation of the building, a floor or part of a floor of the building which has been designed to sustain a uniformly distributed live load of more than 5 kPa shall have a notice, conspicuously and permanently posted adjacent to it, indicating the actual loadings for which the floor or part of the floor has been structurally designed, as follows:

DESIGNED FLOOR LOADING

Distributed	kg/m ²
Concentrated	kg

Design and position of notice plate

(2) The lettering of a notice referred to in sub-regulation (1) shall be embossed or cast in a metal tablet not less than 230 mm square and located not less than 1 m above floor level.

29.3 PREFABRICATED MANUFACTURED BUILDINGS

Notice of structural design

(1) Subject to sub-regulation (3), a prefabricated manufactured building shall have a notice permanently fixed in an accessible position indicating the bases of the structural design to which the building has been constructed.

Information on notice

(2) A notice referred to in sub-regulation (1) shall have -

- (a) the terrain category, the regional basic design wind velocity and the floor live load; and

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- (b) figures embossed, cast, punched or otherwise fixed so that they shall remain legible for the designed life,

of the building to which it relates.

Exemption

(3) This regulation does not apply to or in relation to a prefabricated manufactured building -

- (a) not more than 10 m² in floor area; and
- (b) the walls of which are not more than 2.3 m in height.

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PART 30 - DESIGN FOR DEAD AND OTHER LOADS

30.1 DESIGN OF BUILDINGS

The design of a building shall, where required, comply with the provisions of AS 1170 -

- (a) Part 1, except clause 1.5; and
- (b) Part 2, so that
 - (i) as a minimum requirement, terrain category 2½ with velocity multipliers equal to the average of those given in Table 4 of that Australian Standard for categories 2 and 3 are used where a terrain roughness normally in category 3 may be subject to deterioration in extreme winds;
 - (ii) the regional basic design wind velocity is determined in accordance with Table 30.1;
 - (iii) for the purpose of determining internal pressures in accordance with that Australian Standard, all window openings, whether glazed or not, are regarded as potential dominant openings unless approved protection against debris penetration is provided;
 - (iv) external doors and windows are regarded as potential dominant openings and the internal positive pressure coefficient is not less than plus 0.6p;
 - (v) where doors, windows and claddings do not constitute potential dominant openings, the internal positive pressure co-efficient may be reduced to not less than plus 0.2p; and
 - (vi) protection of an opening is adequate for the purposes of this regulation where it can be shown capable of resisting a 4 kg mass having 100 mm x 50 mm impacting cross-section striking at any angle at a velocity of 20 m/s without affecting internal design pressures.

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TABLE 30.1

MEAN RETURN PERIOD 50 YEAR	
Alice Springs	44 m/s
Barkly	46 m/s
Darwin	55 m/s
Elsey	45 m/s
Gove Peninsula	55 m/s
Hooker Creek	46 m/s
Katherine	49 m/s
Mataranka	49 m/s
Newcastle Waters	46 m/s
Tennant Creek	46 m/s
Ti Tree	46 m/s

Note: Other centres shall be determined by interpolation.

30.2 DESIGN IN FLOOD AREAS

Land subject to flooding

(1) Subject to sub-regulation (2), where building work is proposed to be carried out on land subject to flooding, the Building Controller shall not give building approval to the building work unless the design of the building to which the building work relates is, in his opinion, adequate to withstand the flooding.

Criteria to be taken into account

(2) For the purposes of sub-regulation (1), the Building Controller shall take into account, in relation to the design of a building referred to in that sub-regulation -

- (a) the effect of buoyancy on its sub-structure;
- (b) the stresses induced on its sub-structure by the depth and velocity of the flooding to which the building is likely to be subject;
- (c) the maximum approach velocity of flood water allowed for in the design;
- (d) the design of resistance to debris loading and impact loading; and
- (e) the siting, and the size and shape, of the building.

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Protection against impact

(3) The protection of a building against impact of debris in a flood is adequate where it can be shown capable of resisting an object, 400 mm diameter in cross-section and 1,000 kg in mass, striking end on at a velocity equal to the maximum approach velocity of water in a 1 in 100 year flood.

30.3 CERTIFICATION OF ENGINEER

Buildings other than Class I or X

(1) Where a proposed building is other than a Class I or X building, a certificate shall be submitted to the Building Controller, by a practising structural engineer, certifying that, if constructed in accordance with the plans and specifications to which the certificate relates, the building will be structurally sound and comply with the requirements of this Code applicable to it.

Class I and X buildings

(2) Where a proposed building is a Class I or X building, the Building Controller may require a certificate to be submitted to him, by a practising structural engineer, certifying that, if constructed in accordance with the plans and specifications to which the certificate relates, the building will be structurally sound and comply with the requirements of this Code applicable to it.

Building Controller may require further information

(3) The Building Controller may require a practising structural engineer to submit with a certificate referred to in this regulation the full design criteria and calculations which relate to the building the subject of the certificate.

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PART 31 - EXCAVATION, EARTHWORKS AND RETAINING WALLS

31.1 WATER REMOVAL OR DIVERSION FROM EXCAVATION

Water shall be removed or diverted from an excavation before concrete or other building material is deposited in the excavation.

31.2 RETAINING WALLS

Where required

- (1) Where -
 - (a) the Building Controller is of the opinion that the soil conditions during an excavation or earthworks are such that it is required;
 - (b) an excavation or filled embankment is permanent with a slope steeper than the angle of repose or natural slope of the soil or of the material used; or
 - (c) the Building Controller is of the opinion that an excavation or earthworks will cause undue interference to a site which adjoins the site on which the excavation or earthworks is situated,

a retaining wall, or another approved method of preventing movement of soil or material, shall be provided together with such drainage as is necessary to prevent the retention of water by the retaining wall.

Certificate by practising structural engineer

(2) Where a retaining wall is to be built, a certificate from a practising structural engineer shall be submitted to the Building Controller certifying that, if constructed in accordance with the plans and specifications to which the certificate relates, the retaining wall will be structurally sound and of sufficient strength to support the loads to which it will be subjected.

Construction of retaining wall

(3) A person who constructs a retaining wall shall construct it -

- (a) of durable materials; and
- (b) in accordance with the plans and specifications which a practising structural engineer has, in pursuance of sub-regulation (2), certified and submitted to the Building Controller in relation to the retaining wall.

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31.3 SUPPORT FOR NEIGHBOURING BUILDINGS

Preservation of neighbouring buildings

(1) Where an excavation extends below the footings of a building on a site which adjoins the site on which the excavation is situated, the person causing the excavation to be made shall, at his own expense -

- (a) preserve and protect the building from damage due to the excavation; and
- (b) where necessary, underpin and support in an approved manner the building.

Notice and particulars of work

(2) The person causing an excavation referred to in sub-regulation (1) shall, before excavating below the level of the footings of the building on the site which adjoins the site on which the excavation is situated, give notice of his intention to do so to the owner of the first-mentioned site and shall, at the same time, furnish to the owner particulars of the work he proposes to do.

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PART 32 - FOUNDATIONS

32.1 ASSESSMENT OF ADEQUACY OF FOUNDATIONS

The adequacy of the foundations of a building shall be assessed on the basis of -

- (a) well established and relevant local knowledge and experience of foundation conditions in the locality of the building; or
- (b) tests on the materials of which the foundations are constructed.

32.2 TREATMENT AND EXCAVATION OF FOUNDATIONS

The foundations of a building shall be treated, or excavations for the building taken to the depths necessary, to provide adequate support to the loads imposed by the building.

32.3 SOIL TYPES AND BEARING PRESSURES, &c.

Application

(1) This regulation does not apply to building work other than building work where -

- (a) the class and description of the soil or rock; and
- (b) the allowable bearing pressures,

adopted for the purposes of this regulation are stated on the plans submitted for building approval for the building work.

Allowable bearing pressures

(2) The class and description of soil or rock and the allowable bearing pressures adopted for the purposes of this regulation are those specified in -

- (a) Table 32.3(2A);
- (b) Table 32.3(2B); and
- (c) Table 32.3(2C).

Seasonal moisture conditions

(3) For the purposes of determining the appropriate soil or rock description for use pursuant to this regulation, the seasonal moisture conditions to which a building will be subject shall be taken into account in the design of the building.

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Weathered rock

(4) Where rock is in an extremely weathered form so that, although rock texture and appearance are mainly preserved, the rock substance has the strength properties of soil and may be readily disintegrated by gentle agitation in water, it shall be deemed to be soil for the purposes of this regulation and classified in accordance with Table 32.3(2A) and Table 32.3(2B).

Foundations near boundary of site

(5) Where a pad or strip footing of a building is on or within one metre of the boundary of the site of the building, other than a street alignment, the allowable bearing pressure for the pad or strip footing shall be two-thirds of the value required by this regulation.

TABLE 32.3(2A)
FOOTINGS ON COHESIVE SOIL

Description	Maximum allowable bearing pressures for footings at ground surface (kPa)	
	Strip footings	Pad footings (square or circular)
Very soft clay and silt	20	30
Soft clay and silt	40	60
Firm clay	95	110
Stiff clay	180	210
Very stiff clay	350	430
Hard clay	520	650

Notes:

1. Rectangular footings with width to length proportions in the ratio of 1:5 or more shall be deemed to be strip footings.
2. For rectangular footings with a width to length ratio of not less than 1:1 and not more than 1:5, allowable bearing pressure may be interpolated between those required for strip and pad footings.
3. Where a footing is situated below ground level, the allowable bearing pressure may be increased by 5 kPa for each 300 mm in depth which the base of the footing is below the ground surface level.

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4.(1) For the purposes of this table, unless the contrary intention appears -

"firm clay" means soil which, with moderate effort, can be penetrated to a depth of 50 mm by the thumb;

"hard clay" means soil which can be indented by the thumbnail but only with great difficulty;

"soft clay and silt" means soil which can be easily penetrated to a depth of 50 mm by the thumb;

"stiff clay" means soil which can be readily indented by the thumb, but penetrated by the thumb only with great effort;

"very soft clay and silt" means soil which can be readily penetrated to a depth of 100 mm by the clenched fist;

"very stiff clay" means soil which can be readily indented by the thumbnail.

(2) For the purposes of sub-clause (1), "clay" includes silty or sandy clays.

TABLE 32.3(2B)

FOOTINGS ON NON-COHESIVE SOILS

Description	Allowable bearing pressure in kPa for a footing situated at ground surface level	Increase in allowable bearing pressure in kPa for every 300 mm in depth of base of footing below ground surface level	Maximum allowable bearing pressure in kPa under any conditions
Loose sand	50w	15	100
Medium sand or gravel	150w	40	250
Dense sand or gravel	350w	100	550
Very dense gravel	600w	150	700

Notes:

1. For the purpose of this table, "w" is the least plan dimension of the footing in metres.

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2. Where the Building Controller is of the opinion that the water table is likely to rise to a level the distance of which below the base of the footing is not more than w , the allowable bearing pressure and maximum allowable bearing pressure shall be one-half of that otherwise required.

3. For the purposes of this table, unless the contrary intention appears -

"dense sand or gravel" means sand or gravel deposits requiring picking for removal and offering high resistance to penetration by excavating tools;

"loose sand" means sand deposits readily removable by shovelling only and into which a sharp pointed wooden post 50 mm square can be easily driven with a hammer not more than 5 kg in mass;

"medium sand or gravel" means sand or gravel deposits removable by vigorous shovelling and into which a sharp pointed wooden post 50 mm square can be driven with a hammer not more than 5 kg in mass with some difficulty;

"very dense gravel" means gravel deposits requiring hard picking for removal and offering hard resistance to disturbance by excavating tools.

TABLE 32.3(2C)

FOOTINGS ON ROCK

Description	Maximum allowable bearing pressures for rock foundations in various conditions of weathering (in kPa)		
	Highly weathered rock	Moderately weathered rock	Fresh to slightly weathered rock
Soft limestone and similar porous rocks	100 - 400	300 - 1,000	800 - 1,500
Sandstone, mudstone and like sedi- mentary rocks	200 - 600	500 - 1,500	1,200 - 2,000

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TABLE 32.3(2C) - continued

Description	Maximum allowable bearing pressures for rock foundations in various conditions of weathering (in kPa)		
	Highly weathered rock	Moderately weathered rock	Fresh to slightly weathered rock
Slate, schist and like metamorphic rocks	200 - 600	600 - 2,000	1,500 - 3,000
Basalt, granite and like igneous rocks	200 - 600	500 - 2,000	1,500 - 4,500

Notes:

1.(1) The lower end of each range shall be used for rock foundations of the category to which the range applies and which are highly jointed or contain obvious defects.

(2) The upper end of each range shall be used for massive and consistent rock foundations of the category to which the range applies.

2. A bearing pressure greater than 600 kPa shall not be imposed by a footing resting on a basalt rock foundation unless a practising structural engineer -

- (a) establishes the condition of the basalt rock foundation to a depth of not less than $1\frac{1}{2}$ times the width or diameter of the footings; and
- (b) decides, in accordance with good engineering practice and the condition of the basalt rock foundation, that it is safe to rest the footing on that foundation.

3. For the purpose of this table, unless the contrary intention appears -

"fresh to slightly weathered rock" means rock predominantly of a mineral colour or lustre with only minor discolouration adjacent to joints and pieces of which can only be broken with difficulty using hand tools;

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"highly weathered rock" means rock of predominantly earth colours (particularly yellows, reds and browns) with numerous clay seams and pieces of which can generally be broken by hand;

"moderately weathered rock" means rock showing some earthy colour predominantly surrounding the joints with some clay seams and pieces of which can generally be broken by hand.

32.4 ALLOWABLE BEARING PRESSURES

The bearing pressures on the foundations of a building shall be not more than the values specified in Table 32.3(2A), Table 32.3(2B) and Table 33.3(2C) applicable to those foundations unless -

- (a) an investigation of the foundations has been conducted and the Building Controller is satisfied, in view of the report on the investigation, that higher bearing pressures are justified; or
- (b) an investigation in accordance with AS 1726 has been conducted of the site of the building and the bearing pressures are based on the information obtained from the investigation.

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PART 33 - FOOTINGS

33.1 DESIGN OF FOOTINGS

The footings, including slab-on-ground footings, if any, of a building shall be designed and constructed so that the relative movements, if any, of separate footings and of different parts of one footing under loading, or of a footing and another part of the substructure of the building do not -

- (a) impair the stability of; or
- (b) cause significant structural damage to,

the superstructure of the building.

33.2 FOOTINGS FOR CLASS I AND X BUILDINGS

Application

- (1) The footings of -

- (a) a Class I building; or
- (b) a Class X building appurtenant to a Class I building,

constructed in accordance with the requirements of this regulation applicable to them comply with regulation 33.1 except where, due to -

- (c) the nature of the foundations; or
- (d) the design,

of the building, or such other matters as the Building Controller thinks fit, the Building Controller is of the opinion that those footings are not adequate.

Concrete strength

(2) Concrete used in footings constructed in accordance with this regulation shall have a compressive strength at 28 days after the laying of the footings of not less than 15 MPa, as determined in accordance with AS 1480.

Steel reinforcement

(3) Where steel reinforcement is required by this regulation in footings, the reinforcement shall -

- (a) where the reinforcement consists of steel bars - comply with AS 1302;

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- (b) where the reinforcement consists of steel reinforcing fabric - comply with the requirements of Mesh Reference No. F818 or Trench Mesh Reference No. F8TM as provided in AS 1304;
- (c) be equally distributed in 2 layers, one near the top, and one near the bottom, of each footing;
- (d) have a concrete cover not less than 50 mm in thickness at any part;
- (e) be laid continuously in the footings, each layer being lapped -
 - (i) at intersections - for its full width; and
 - (ii) at splices - for not less than 450 mm; and
- (f) be securely tied to 6 mm diameter steel spacers situated at not more than 1.2 m centres.

Strip footings

- (4) A strip footing shall -
 - (a) be constructed of reinforced concrete;
 - (b) have a minimum width and depth in accordance with the requirements of Table 33.2(4A);
 - (c) where stepping is necessary - comply with the requirements of Figure 33.2(4) and have level bottoms between steppings; and
 - (d) be reinforced in accordance with the requirements of Figure 33.2(4) and Table 33.2(4B).

Footings for freestanding piers

- (5) A brick or concrete block freestanding pier shall have brick, concrete block or concrete footings -
 - (a) not less than 150 mm in thickness; and
 - (b) projecting not less than 50 mm beyond each face of the pier.

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TABLE 33.2(4A)

CROSS-SECTIONAL DIMENSIONS OF REINFORCED
CONCRETE STRIP FOOTINGS

Construction	Nominal thickness of masonry component of wall to be supported - not more than - (mm)	Size of concrete (width x depth in mm)	
		For stable soil foun- dations such as sand or gravel	Other foun- dations not subject to significant movement or loss of stability with climatic changes
Masonry one storey building - for wall not more than 4.2 m in height	270 110	450 x 250 300 x 250	450 x 300 300 x 300
Masonry veneer one storey building - for wall not more than 4.2 m in height	110	300 x 250	300 x 300
Masonry veneer 2 storey building - for wall not more than 7.2 m in height	110	380 x 250	380 x 300
Framed construction (timber or metal studs) one storey building - for foundation wall not more than 1.5 m in height	110	230 x 150	230 x 200
Framed construction (timber or metal studs) 2 storey building - for foundation wall not more than 1.5 m in height	110	300 x 250	300 x 300

Note: For the purposes of this table, the height of a wall shall be measured from the top of the strip footing to the top of the masonry component of the wall, disregarding the gable, if any.

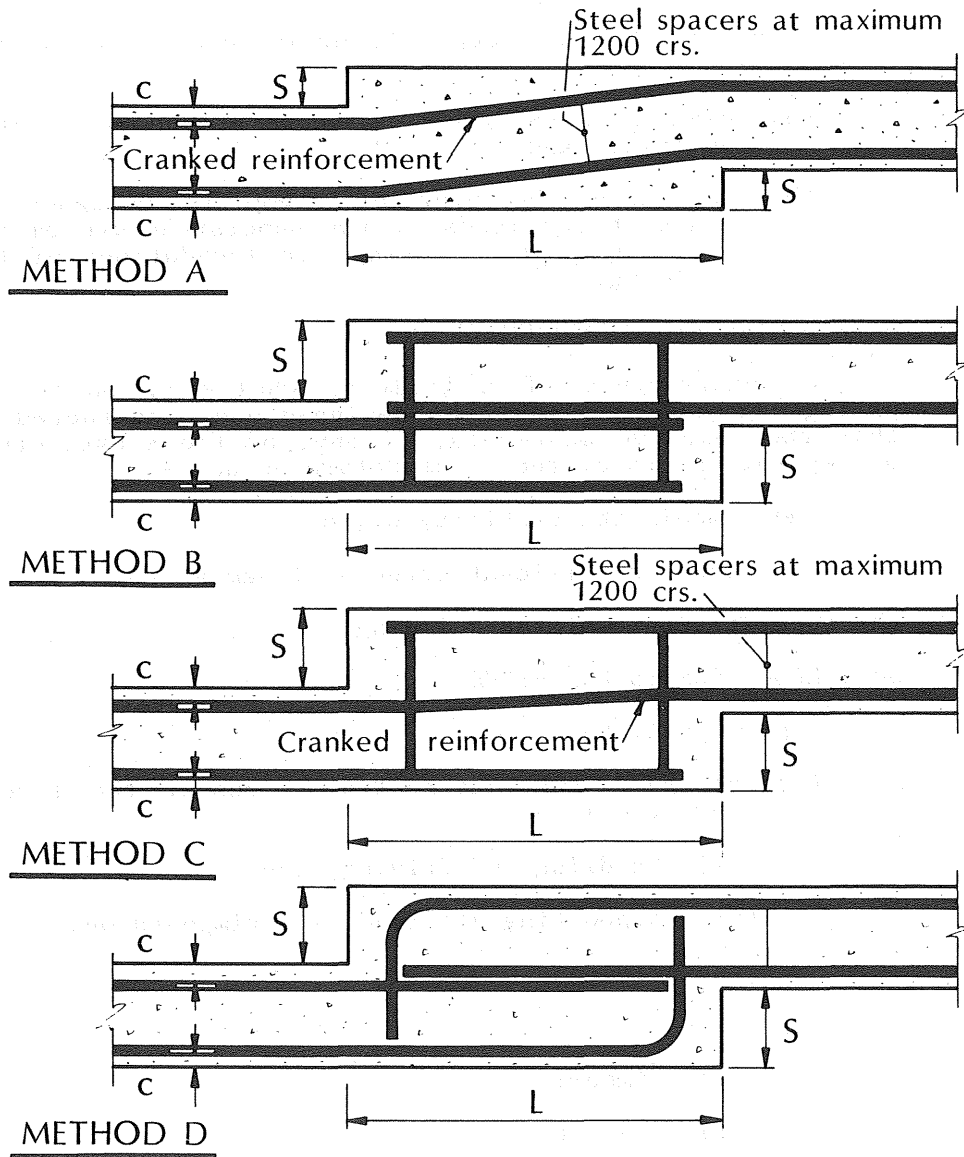
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TABLE 33.2(4B)

ALTERNATIVE REINFORCEMENT FOR STRIP FOOTINGS

Width of strip footing (mm)	Minimum number of main wires per layer using F818 or F8TM fabric as referred to in regulation 33.2(3)(b)	Minimum number of 10 mm diameter steel bars per layer	Minimum number of 12 mm diameter steel bars per layer
230	2	2	2
300	3	3	2
380	3	3	2
450	4	5	3

FIGURE 33.2(4)



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PART 34 - PILING AND CAISSONS

34.1 APPLICATION

This Part does not apply to or in relation to a pier or stump -

- (a) used as a substructure above ground level of a building; and
- (b) in which the pier or stump is designed to transmit the loads of the superstructure of the building to the footings or foundations of the building.

34.2 DESIGN AND CONSTRUCTION

A substructure of a building wholly or partly of pilings or caissons shall be designed and constructed so that the relative movements, if any, of the substructure or separate parts of the substructure do not -

- (a) impair the stability of; or
 - (b) cause significant structural damage to,
- the superstructure of the building.

34.3 REQUIREMENTS FOR PILES

A pile shall be -

- (a) designed and constructed to resist the forces involved in -
 - (i) handling and driving; and
 - (ii) supporting all loads superimposed on, the pile; and
- (b) of -
 - (i) timber;
 - (ii) concrete;
 - (iii) steel;
 - (iv) an approved material; or
 - (v) an approved combination of materials referred to in this paragraph.

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34.4 CERTAIN PILES COMPLY

A pile designed and installed in accordance with AS 2159 satisfies the requirements of this Part applicable to a pile.

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PART 35 - GENERAL REQUIREMENTS FOR WALLS

35.1 LOADBEARING WALL CONSTRUCTION

Definition of "loadbearing wall construction"

(1) For the purposes of this regulation, "loadbearing wall construction", in relation to a building, means that type of construction in which loadbearing walls are designed as the principal means of transmitting throughout the height of the building the dead, live and other loads on the building.

Application

(2) A reference in this regulation to a building is a reference to a building of loadbearing wall construction in which the level of the floor of the topmost storey of the building is more than 11 m in height above the lowest level of the finished ground which adjoins the building.

Structural design

- (3) A building shall be -
 - (a) provided with horizontal continuity at each of its floor levels by means of -
 - (i) a reinforced concrete floor, cast *in situ*, capable of resisting all the negative bending moments specified for such a floor by AS 1480; or
 - (ii) a floor which comprises precast concrete units connected in such a manner as to be capable of resisting all the negative bending moments specified by AS 1480 for a reinforced concrete floor cast *in situ*;
 - (b) constructed so that its floors, together with its loadbearing walls, are capable of resisting bending moments which are equivalent, in their effect, to the negative bending moments specified by AS 1480 for a reinforced concrete floor cast *in situ*; or
 - (c) so constructed that, if a part of one of its loadbearing walls -
 - (i) 6 m in length; and
 - (ii) in height - not more than the height of the storey in which it is situated,

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is removed or displaced from any cause whatsoever -

- (iii) the stresses developed in the remaining parts of the wall do not exceed normal working stresses by more than 25%; and
- (iv) the remaining structural parts of the building are held in place.

Certificate from practising structural engineer

(4) Where the Building Controller is not satisfied that a building complies with sub-regulation (3), he may require the submission to him of a certificate from an approved practising structural engineer, certifying that, if constructed in accordance with the plans and specifications to which the certificate relates, the building will so comply.

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PART 36 - WALLING OF MASONRY

36.1 EXTERNAL WALL THICKNESS

Cavity walls

(1) For the purposes of this Part, the combined thicknesses of the inner and outer leaves of a cavity wall shall be the thickness of the wall.

Minimum thickness of external walls

- (2) Where the external walls of a building are -
 - (a) of masonry construction; and
 - (b) less than 200 mm in thickness,

the Building Controller may require the submission to him of a certificate by an approved practising structural engineer, certifying that, if constructed in accordance with the plans and specifications to which the certificate relates, the walls will be structurally adequate.

36.2 BRICKWORK MASONRY

Design and construction of bricks

- (1) Subject to sub-regulation (3), masonry of -
 - (a) burnt clay and shale bricks;
 - (b) calcium silicate bricks; or
 - (c) concrete bricks,

shall be designed and constructed in accordance with AS 1640.

Strength of bricks

(2) The strength of bricks referred to in sub-regulation (1) shall be so that -

- (a) the compressive strength figures used in the design calculations are based on the known compressive strength of the bricks to be used in walls;
- (b) where the known compressive strengths of the bricks is more than 48.0 MPa - the design calculations are based on a maximum figure of 48.0 MPa; and

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(c) where the compressive strength of the bricks is not -

- (i) more than 24.0 MPa - no brick has a transverse strength of less than 1.7 MPa and the average transverse strength of the bricks is not less than 2.0 MPa; and
- (ii) less than 24.0 MPa - no brick has a transverse strength of less than 1.9 MPa and the average transverse strength of the bricks is not less than 2.7 MPa.

Building Controller may require evidence as to strength of bricks

(3) Where the Building Controller is not satisfied that bricks referred to in sub-regulation (1) comply with sub-regulation (2)(c), he may require the submission to him of evidence that the bricks meet the requirements of sub-regulation (2)(c) applicable to them and that the compressive strength of the bricks is not less than that used in the design calculations.

Certain provisions of AS 1640 not to apply

- (4) For the purposes of this regulation -
 - (a) the definition of "brick" in rule 1.4;
 - (b) rule 2.1.2 - clay bricks;
 - (c) rule 2.3 - damp-proof courses, flashings and weatherings;
 - (d) rule 3.7 - prevention of moisture penetration;
 - (e) the second paragraph of rule 5.1 - supervision;
 - (f) rule 6.4 - determination of minimum compressive strength of bricks;
 - (g) rule 6.5 - determination of initial rate of absorption of bricks; and
 - (h) rule 6.9 - sound insulation tests,

of AS 1640 do not apply to or in relation to bricks referred to in sub-regulation (1).

36.3 CONCRETE BLOCK MASONRY

Design and construction of unreinforced concrete block masonry

(1) Unreinforced concrete block masonry shall be designed and constructed in accordance with AS 1475 Part I.

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Design and construction of free-standing walls of unreinforced concrete block masonry

(2) A free-standing wall of unreinforced concrete block masonry shall, in addition to complying with the requirements of sub-regulation (1), be designed so as to have a height to thickness ratio of not more than 8, except where -

- (a) a membrane type damp-proof course is inserted near the base of the wall - in which case such ratio shall be not more than 5; or
- (b) where the wall is in the nature of a parapet - in which case such ratio shall be not more than 3.

36.4 SPECIAL MASONRY

Where permitted

(1) The Building Controller may permit the construction of a building of masonry construction in which -

- (a) the walls are less than the minimum thickness required by regulation 36.1, 36.2 or 36.3; or
- (b) the masonry is other than masonry specified in regulation 36.2(1),

where the building is constructed in accordance with this regulation.

Limitations

(2) For the purposes of sub-regulation (1), where the masonry in a building is -

- (a) loadbearing - the building shall contain not more than 2 storeys; and
- (b) non-loadbearing - the masonry shall be fully supported at the level of each of its floors by -
 - (i) frame construction;
 - (ii) rigid construction effectually functioning as frame construction;
 - (iii) brickwork masonry which complies with regulation 36.2; or
 - (iv) concrete block masonry which complies with regulation 36.3.

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Certificate from practising structural engineer

(3) The Building Controller may, in relation to a building to be constructed in accordance with this regulation, require the submission to him of a certificate -

- (a) from an approved practising structural engineer certifying that, if constructed in accordance with the plans and specifications to which the certificate relates, the building will be structurally sound; and
- (b) setting forth in detail the basis on which it is given and the extent to which the engineer has relied on relevant specifications, rules, codes of practice or publications in relation to the construction of the building.

36.5 PROTECTION OF STEEL WHICH SUPPORTS MASONRY OVER OPENING

A steel member which -

- (a) supports masonry over an opening in an external wall; and
- (b) in the opinion of the Building Controller, is exposed to a salt laden atmosphere,

shall be protected against corrosion by -

- (c) hot-dip galvanizing not less than 127 um in thickness;
- (d) encasing in concrete; or
- (e) other means not, in the opinion of the Building Controller, less effective than the galvanising specified in paragraph (c).

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PART 37 - WALLING NOT OF MASONRY, TIMBER
OR VENEER-ON-STRUCTURAL FRAMING, &c.

37.1 SPECIAL WALLING

Structural soundness of certain walls

(1) A wall not of masonry, timber, veneer-on-structural framing, concrete or steelwork shall be designed and constructed so that it is, in the opinion of the Building Controller, structurally sound.

Certificate from practising structural engineer

(2) The Building Controller may, in relation to a wall referred to in sub-regulation (1), require the submission to him of a certificate -

- (a) from an approved practising structural engineer certifying that, if constructed in accordance with the plans and specifications to which the certificate relates, the wall will be structurally sound; and
- (b) setting forth in detail the basis on which it is given and the extent to which the engineer has relied on relevant specifications, rules, codes of practice or publications in relation to the construction of the wall.

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PART 38 - FLOORS

No provisions.

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PART 39 - ROOFS AND ROOF STRUCTURES

39.1 DEFINITION OF "ROOF"

For the purposes of this Part, unless the contrary intention appears, "roof" includes a roof structure.

39.2 ROOFS GENERALLY

A roof shall, in addition to complying with the other requirements of this Code applicable to it, comply with the requirements of Specification No. 39.2, applicable to it.

39.3 PARTS OF ROOF

A support, fixing or attachment to a roof, including a parapet, ridge capping, gutter, fascia, barge board and the like, shall be designed and constructed to resist the wind loads to which the roof of which it forms a part, or to which it is attached, is to be subjected.

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SPECIFICATION No. 39.2

1. APPLICATION

A reference in this Specification to a roof is a reference to a roof which is part of a building situated in a tropical cyclone area.

2. BRACING

Where bracing is removed, &c.

(1) The bracing of a roof shall be arranged so that, where a single component of the bracing is removed or displaced from any cause whatsoever, the stresses developed in the roof as a consequence of that removal or displacement is increased by not more than 25% of its normal working stresses and the remaining parts of the roof are held in place.

Roof cladding

(2) For the purposes of this clause, roof cladding shall not be considered to be bracing for a roof unless the Building Controller is satisfied that the cladding will be fixed in such a manner as to act as a braced diaphragm under the combined effects of uplift, repeated loadings and diaphragm action.

3. ROOFING OF METAL

Metal roofing to be fixed with screws, &c.

(1) Roofing of metal shall be fixed with screws, bolts or by other approved methods.

Test for strength of metal roofing

(2) Roofing of metal shall be such that, upon the proof testing of sheeting and its fitments, the sheeting does not fail upon the 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.

Other tests for strength of metal roofing

(3) A test other than the test referred to in sub-clause (2) may be used to determine the strength of roofing of metal where the test -

- (a) is approved; and
- (b) shows that the roofing, including its fitments, is capable of withstanding the wind and other loads to which it is to be subjected.

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4. ROOFING OF OTHER MATERIALS

Roofing other than roofing of metal may be used where it is shown, to the satisfaction of the Building Controller, that that non-metal roofing has undergone a test equivalent to the test referred to in clause 3(2) without observable defects.

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PART 40 - STRUCTURAL CONCRETE AND STEELWORK

40.1 DESIGN AND ERECTION

Structures and members of concrete or steel

(1) A structure or member of concrete or steel shall be -

- (a) designed and constructed in accordance with the principles of structural mechanics; and
- (b) capable of sustaining the most adverse combination of loads to which it is to be subjected.

Where requirements satisfied

(2) Where a structure or member of -

- (a) unreinforced concrete, reinforced concrete or composite steel-concrete complies with AS 1480;
- (b) prestressed concrete complies with AS 1481;
- (c) steel complies with AS 1250 or AS 1538; or
- (d) steel situated in a tropical cyclone area is designed to a wind and dead load combination of $x_D \times x_W$,

the requirements of sub-regulation (1) are satisfied in relation to the structure or member.

40.2 CERTIFICATE OF ENGINEER, &c.

The Building Controller may, in relation to a structure or member proposed to be of steel or concrete, require the submission to him of a certificate -

(a) from -

- (i) a practising structural engineer; or
- (ii) another approved person,

certifying that, if constructed in accordance with the plans and specifications to which the certificate relates, the structure or member will be structurally sound; and

- (b) setting forth in detail the basis on which it is given and the extent to which the engineer or person has relied on relevant specifications, rules, codes of practice or publications in relation to the construction of the structure or member.

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PART 41 - TIMBER CONSTRUCTION

41.1 DESIGN AND ERECTION

Structures and members of timber

(1) A structure or member of timber, including its connections, shall be -

- (a) designed and constructed in accordance with the principles of structural mechanics; and
- (b) capable of sustaining the most adverse combination of loads to which it is to be subjected.

Where requirements satisfied

(2) Where a structure or member of timber, including its connections, complies with -

- (a) AS 1684; or
- (b) AS 1720,

and -

- (c) where the structure or member is particleboard structural flooring - AS 1860,

the requirements of sub-regulation (1) are satisfied in relation to the structure or member.

41.2 CERTIFICATE OF ENGINEER, &c.

The Building Controller may, in relation to a structure or member, including its connections, to be of timber, require the submission to him of a certificate -

- (a) from -
 - (i) a practising structural engineer; or
 - (ii) an approved person,

certifying that, if constructed in accordance with the plans and specifications to which the certificate relates, the structure or member will be structurally sound; and

- (b) setting forth in detail the basis on which it is given and the extent to which the engineer or person has relied on relevant specifications, rules, codes of practice or publications in relation to the construction of the structure or member.

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PART 42 - VENEER-ON-STRUCTURAL FRAMING

42.1 TIES FOR MASONRY VENEER

Wall ties

(1) Masonry veneer shall be tied and fixed to its structural framing so as to comply with Part 30.

Where requirements satisfied

(2) The requirements of sub-regulation (1) are satisfied where masonry veneer is tied to the framework with metal wall ties which comply with AS Int. 324 and fixed in accordance with AS 1640.

42.2 WALL CAVITIES

Width

(1) The external walls of veneer-on-structural framing shall be constructed so that a clear space of not less than 25 mm and not more than 50 mm is left between the veneer and the framework of the external walls.

Mortar droppings

(2) Wire mesh fixed at the base of a cavity in the external walls of masonry veneer construction shall be protected with paper or other material capable of collecting mortar droppings falling in the cavity during the period of construction of masonry above the level of the base of the cavity, such paper or other material to be removed from the cavity before internal linings, if any, are fixed in position.

42.3 MASONRY VENEER TO BE NON-STRUCTURAL

Masonry veneer to be regarded as non-structural skin

(1) Where masonry veneer is to be used in a structure, the masonry veneer shall, in calculating for the purposes of this Code the stresses on the structure, be regarded as a non-structural skin of the structure.

Lateral forces on masonry veneer

(2) Wall ties used to tie masonry veneer to structural framing shall be capable of transferring all lateral forces on the masonry veneer to the structural framing.

Design of structural framing

(3) Structural framing to which masonry veneer is tied shall be designed to ensure the stability of the masonry veneer.

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PART 43 - OTHER KINDS OF CONSTRUCTION

43.1 CONSTRUCTION WHERE NO SPECIFIC PROVISIONS

Where no provision is made in this Code for a particular system of construction to be used in building work, the Building Controller may grant building approval to the building work where he is satisfied that the building to be constructed in pursuance of the building work will, when constructed, be structurally sound.

43.2 ALUMINIUM STRUCTURES

- (1) A structure or member of aluminium shall be -
 - (a) designed and constructed in accordance with the principles of structural mechanics; and
 - (b) capable of sustaining the most adverse combination of loads to which it is to be subjected.

Where requirements satisfied

(2) The requirements of sub-regulation (1) are satisfied where a structure or member of aluminium complies with AS 1664.

43.3 FREE-STANDING WALLS AND FENCES

Compliance with Part 30

(1) Subject to this regulation, a free-standing wall or fence shall comply with the requirements of Part 30 applicable to wind loading as if, for that purpose, the free-standing wall or fence were a building.

Exemptions

(2) Subject to sub-regulation (3), this regulation does not apply to or in relation to a free-standing wall or fence which is -

- (a) not more than 1 m in height;
- (b) not more than 2 m in height where it is -
 - (i) clad in material which complies with AS 2423; or
 - (ii) constructed of posts and rails and used for the retention of livestock, for agricultural purposes, or for like purposes; or

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- (c) constructed of masonry which complies with regulation 36.3.

Building Controller may require application for building approval for certain free-standing walls or fences

(3) Where the Building Controller is of the opinion that a free-standing wall or fence otherwise exempted under sub-regulation (2) from the requirements of sub-regulation (1) may, by reason of airborne debris, cause undue danger to sites in the locality of the free-standing wall or fence, he may, notwithstanding sub-regulation (2), require the submission to him of an application for building approval in relation to the free-standing wall or fence.

43.4 CERTIFICATE OF ENGINEER, &c.

The Building Controller may, in relation to a construction to be built in accordance with this Part, require the submission to him of a certificate -

- (a) from -
 - (i) a practising structural engineer; or
 - (ii) an approved person,
certifying that, if constructed in accordance with the plans and specifications to which the certificate relates, the construction will be structurally sound; and
- (b) setting forth in detail the basis on which it is given and the extent to which the engineer or approved person has relied on relevant specifications, rules, codes of practice or publications in relation to the construction.

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PART 44 - DRAINAGE OF BUILDING AND SITE

44.1 ROOF DRAINAGE

Drainage system to be provided

(1) Subject to sub-regulation (3), the roof of a building shall be provided with a drainage system.

Design of drainage system

(2) The design and construction of a drainage system referred to in sub-regulation (1), and the position and manner of discharge of a stormwater drain, of a building shall be to the satisfaction of the Building Controller, but shall not, in any case -

- (a) result in the entry of water into the building or onto a site which adjoins the site of the building;
- (b) unduly affect the stability of the building or another building on the same site as the first-mentioned building; or
- (c) create an unhealthy or dangerous condition on the site of the building.

Exemption from roof drainage system

(3) The Building Controller may exempt a roof, or part of a roof, of a building from having a system of drainage where he is satisfied that the exemption will not result in, or create any of, the conditions referred to in sub-regulation (2)(a), (b) or (c).

44.2 BUILDING ON LAND SUBJECT TO DAMPNES

Where the Building Controller is of the opinion that the dampness of a site so warrants, he may require -

- (a) the sub-soil of the site to be effectively drained; or
- (b) the surface of the ground beneath a building on the site to be regraded or filled and provided with adequate outlets to prevent an accumulation of water beneath the building.

44.3 DRAINAGE OF LAND EXTERNAL TO BUILDING

Where the Building Controller is of the opinion that paving, excavation or other work on the natural surface of a site causes, or may cause, undue interference with the existing drainage of rain water falling on the site, whether the existing drainage is natural or otherwise, he

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may, before he grants building approval in relation to the site, require the provision, to his satisfaction, of a system of drainage to offset any problems arising, or which may arise -

- (a) external to a building on the site; or
- (b) to a site or building which adjoins that first-mentioned site,

from such interference.

44.4 SWIMMING POOLS AND TANKS

Design

(1) Subject to sub-regulation (2), where the Building Controller is of the opinion that the structural failure of a swimming pool or tank will cause undue interference, by reason of flooding or any other cause, on a site which adjoins the site on which the swimming pool or tank is situated, require the submission to him of a certificate from a practising structural engineer certifying that -

- (a) the construction is structurally sound; and
- (b) setting forth in detail the basis on which it is given and the extent to which the engineer has relied on relevant specifications, rules, codes of practice or publications in relation to the swimming pool or tank.

Exemption

(2) Sub-regulation (1) does not apply to or in relation to a pool or tank which has a capacity of less than 10 kl.

Building approval for swimming pools

(3) Unless otherwise required by the Building Controller, building approval is not required for the construction of a swimming pool.

44.5 BUILDING ON LAND SUBJECT TO FLOODING

Construction

(1) Subject to sub-regulation (3), unless approved, a building shall not be constructed upon a site liable to flooding.

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Conditions of approval

(2) An approval referred to in sub-regulation (1) shall be subject to the conditions that -

- (a) the level of the lowest floor or part of a floor of the building the subject of the approval is not less than 300 mm in height above the known 1:100 year maximum flood level;
- (b) the level of all inlets and disconnector traps to a sewerage system is not less than 300 mm in height above the known 1:100 year maximum flood level;
- (c) the whole site of the building the subject of the approval, including areas under the building, is graded and drained to prevent ponding of storm or flood water; and
- (d) regulation 30.2 is complied with.

Exemptions

(3) Sub-regulation (1) does not apply to or in relation to -

- (a) a Class X building;
- (b) a garage attached to a Class I, II or III building; or
- (c) an alteration to an existing building where the area of the building is not increased by more than 20 m².

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PART 45 - DISPOSAL OF GARBAGE AND OTHER HOUSEHOLD WASTES

No provisions.

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PART 46 - BATHROOMS, CLOSET FIXTURES, KITCHENS AND LAUNDRIES, &c.

46.1 COMBINED LAUNDRIES AND KITCHENS PROHIBITED

Facilities for the washing of clothes shall not be installed in -

- (a) a kitchen; or
- (b) a room used for the preparation, cooking or consumption of food.

46.2 CLASS I BUILDINGS

Facilities to be provided

- (1) A Class I building shall be provided with -
 - (a) a kitchen or facilities in another room for the preparation and cooking of food;
 - (b) a bath or shower;
 - (c) clothes washing facilities which comprise not less than one washtub and space in the same room for the installation of a washing machine;
 - (d) a clothes line or clothes hoist constructed in an approved position, or a heat-operated drying cabinet or like appliance for the exclusive use of the occupants of the building; and
 - (e) a closet fixture.

Facilities detached from main building

(2) Where a facility referred to in sub-regulation (1) provided for a Class I building is not included in the Class I building, it shall be set aside for the exclusive use of the occupants of the Class I building.

46.3 CLASS II BUILDINGS

Facilities for each sole-occupancy unit

- (1) A sole-occupancy unit in a Class II building shall be provided with -
 - (a) a kitchen or facilities in another room for the preparation and cooking of food;
 - (b) a bath or shower; and
 - (c) a closet fixture,

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such facilities, except for a closet fixture in an unsewered area, to be provided within the sole-occupancy unit.

Number of common laundries required

(2) A separate laundry shall be provided in a Class II building for each 4, or part of 4, sole-occupancy units in the building, each such laundry to be provided with not less than one washtub and space for the installation of a washing machine.

Exclusions from calculations

(3) For the purposes of sub-regulation (2), a sole-occupancy unit that is provided in accordance with sub-regulation (4) with its own clothes washing facilities shall not be taken into account.

Individual clothes washing facilities

(4) A sole-occupancy unit in a Class II building may be provided with its own clothes washing facilities, comprising not less than one washtub and space within the same room for the installation of a washing machine and, where those facilities are not installed within the sole-occupancy unit, they shall be installed in a laundry that is set aside for the exclusive use of the occupants of the sole-occupancy unit.

Types of clothes drying facilities required

(5) A Class II building shall be provided with -

(a) clothes lines or clothes hoists -

(i) constructed in approved positions; and

(ii) which comprise not less than 7.5 m of line per sole-occupancy unit in the building; or

(b) one heat-operated drying cabinet or like appliance for every 4, or part of 4, sole-occupancy units in the building.

Exclusions from calculations

(6) For the purposes of sub-regulation (5), a sole-occupancy unit that is provided with a heat-operated drying cabinet or like appliance for the exclusive use of the occupants of the unit shall not be taken into account.

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Closet fixture for employees

(7) A Class II building, or a group of Class II buildings constructed on the one site, which contains, or which contain in the aggregate, as the case may be, more than 10 sole-occupancy units shall be provided with not less than one closet fixture -

- (a) installed in a compartment or room that is situated at or about ground level; and
- (b) accessible without entering a sole-occupancy unit.

46.4 CLASS III BUILDINGS

Facilities for residents

(1) A Class III building, or a group of Class III buildings constructed on the one site, shall be provided with not less than one bath or shower and one closet fixture for every 8, or part of 8, persons for whom bedroom or dormitory accommodation is provided in the building or group of buildings.

Exclusions from calculations

(2) For the purposes of sub-regulation (1), the number of persons to be accommodated in a bedroom to which is attached -

- (a) a bath or shower; or
- (b) a closet fixture,

for the exclusive use of the occupants of the bedroom shall not be taken into account.

46.5 CLASS IV BUILDINGS

Facilities to be provided

A Class IV building shall be provided with -

- (a) a kitchen or facilities in another room for the preparation and cooking of food;
- (b) a bath or shower;
- (c) clothes washing facilities which comprise not less than one washtub and space in the same room for the installation of a washing machine;

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- (d) a clothes line or clothes hoist constructed in an approved position, or a heat-operated drying cabinet or like appliance for the exclusive use of the occupants of the building; and
- (e) a closet fixture.

46.6 CLASS V, VI, VII, VIII AND IX BUILDINGS

Closet fixtures

(1) A Class V, VI, VII, VIII or IX building, an assembly ground, gymnasium, open air theatre, public swimming pool or the like shall be provided in accordance with Table 46.6(1A) and Table 46.6(1B) with closet fixtures.

Interpretation

- (2) For the purpose of this regulation -
 - (a) a closet fixture shall include one washbasin for each 2, or part of 2, closet fixtures;
 - (b) where more than one closet fixture is required - the term closet fixture shall include the term urinal stall, except that not more than half the number of closet fixtures so required shall be urinal stalls; and
 - (c) where a urinal stall is provided in the form of a continuous slab or trough - each 600 mm of length of the slab or trough shall be counted as one urinal stall.

Installation of and access to closet fixtures

(3) In a class of building specified in column 1 of Table 46.6(1A) and Table 46.6(1B), a closet fixture shall -

- (a) be installed in a part of the building that is separated from other parts of the building; and
- (b) have access by means of an airlock which complies with regulation 50.7(8).

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TABLE 46.6(1A)

NUMBER OF CLOSET FIXTURES REQUIRED TO BE PROVIDED IN
BUILDINGS PURSUANT TO REGULATION 46.6(1) FOR PERSONS
EMPLOYED IN OR ENGAGED ABOUT THE BUILDINGS

Class of building	Number of persons employed	No. of closet fixtures for males	No. of closet fixtures for females
V	For every 10 or part of 10	1	1
VI	For every 10 or part of 10	1	1
VII	For every 10 or part of 10	1	1
VIII	Not more than 100	1 for every 25, or part of 25, persons	1 for every 20, or part of 20, persons
	More than 100 but not more than 200	1 for every 30, or part of 30, persons	1 for every 25, or part of 25, persons
	More than 200	1 for every 40, or part of 40, persons	1 for every 25, or part of 25, persons
IXa	For every 10 or part of 10	1	1
IXb	For every 10 or part of 10	1	1

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TABLE 46.6(1A) - continued

Class of building	Number of persons employed	No. of closet fixtures for males	No. of closet fixtures for females
Assembly grounds, gymnasiums, open air theatres, public swimming pools or the like	For every 10 or part of 10	1	1

TABLE 46.6(1B)

NUMBER OF CLOSET FIXTURES REQUIRED TO BE PROVIDED IN BUILDINGS PURSUANT TO REGULATION 46.6(1) FOR PERSONS NOT EMPLOYED IN OR ENGAGED ABOUT THE BUILDINGS

Class of building	Number of persons (calculated in accordance with regulation 24.23(3))	No. of closet fixtures for males	No. of closet fixtures for females
V	-	-	-
VI	For every 70 or part of 70	1	1
VII	-	-	-
VIII	-	-	-
IXa	For every 100 or part of 100	1	1
IXb	For every 100 or part of 100	1	1
IXb buildings subject to the <i>Liquor Act</i>	For every 25 or part of 25	1	1

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TABLE 46.6(1B) - continued

Class of building	Number of persons (calculated in accordance with regulation 24.23(3))	No. of closet fixtures for males	No. of closet fixtures for females
Assembly grounds, gymnasiums, open air theatres, public swimming pools or the like	For every 100 or part of 100	1	1

46.7 CLOSET FIXTURES FOR HANDICAPPED PERSONS

Definition of "modified closet"

(1) In this regulation, "modified closet" means that part of a building which -

- (a) contains a closet fixture; and
- (b) is modified in accordance with -
 - (i) AS 1428; and
 - (ii) this regulation,
 for wheelchair users.

Modified closets in classes of buildings

(2) Where a means of access in accordance with regulation 24.47 is required to a building or part of a building which is -

- (a) a Class III building - one modified closet shall be provided in each sole-occupancy unit to which that regulation applies; and
- (b) a Class V, VI, VII, VIII or IX building, an assembly ground, gymnasium, open air theatre, public swimming pool or the like - modified closets shall be provided in accordance with Tables 46.7(2A) and 46.7(2B).

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Modified closets required under sub-regulation (2)

(3) A modified closet required to be provided under sub-regulation (2) shall -

- (a) be accessible from a main entrance lift or other area to which accessibility is required by Table 24.47(1);
- (b) have a sliding door, or a hinged door which opens out and is hinged on the side furthest from the closet fixture, openable from the outside in case of an emergency and provided with swing-over indicator bolts;
- (c) have a grab rail which is -
 - (i) fixed on the side wall nearest the closet fixture and on the rear wall;
 - (ii) not less than 30 mm in outside diameter and not more than 40 mm in outside diameter;
 - (iii) has not less than 50 mm clearance and not more than 60 mm clearance between the rail and the wall; and
 - (iv) capable of sustaining the mass of an average adult applied at any point;
- (d) be fitted with a toilet paper holder; and
- (e) have a flushing control not more than 1.2 m in height above the floor surface and accessible for hand operation.

Modified closets in multi-storey buildings

(4) Where a modified closet is required under sub-regulation (2) in a building which has a rise of more than one storey, one modified closet shall be provided on the ground floor of the building and the remainder of the modified closets shall be distributed throughout the remaining floors of the building which are serviced by a passenger lift.

Water taps

(5) A water tap in a wash-basin provided for a modified closet shall have a lever or capstan handle and deliver water, whether hot or cold, through a centre mixing bib and, where the tap provides hot water, it shall be placed to the left of the cold water tap, if any, in the wash basin.

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TABLE 46.7(2A)

NUMBER OF MODIFIED CLOSETS REQUIRED UNDER
REGULATION 46.7(2) TO BE PROVIDED IN
CLASS V, VI, VII, VIII AND IX BUILDINGS

Total number of closet fixtures in building or part of building	Minimum number of modified closets required
Not less than 1 and not more than 15	One for use by both sexes which is separated from other male and female sanitary facilities
Not less than 16 and not more than 99	(a) one for use by each sex separately; or (b) 2 for use by both sexes which are separated from other male and female sanitary facilities
Not less than 100	(a) 2 for use by both sexes which are separated from other male and female sanitary facilities, or one for use by each sex separately; and (b) an additional closet for use by both sexes for each additional 100 closets, or part of 100 closets, in excess of the first 100 closets

TABLE 46.7(2B)

NUMBER OF MODIFIED CLOSETS REQUIRED UNDER
REGULATION 46.7(2) TO BE PROVIDED IN PUBLIC
FACILITIES AT ASSEMBLY GROUNDS, GYMNASIUMS, OPEN AIR
THEATRES, PUBLIC SWIMMING POOLS OR THE LIKE

Total number of closet fixtures provided	Minimum number of modified closets required
Not less than 1 and not more than 10	(a) one for use by both sexes which is separated from other male and female sanitary facilities; or (b) one for use by each sex separately

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TABLE 46.7(2B) - continued

Total number of closet fixtures provided	Minimum number of modified closets required
Not less than 11 and not more than 99	(a) one for use by each sex separately; or (b) 2 for use by both sexes which are separated from other male and female sanitary facilities
Not less than 100	(a) 2 for use by both sexes which are separated from other male and female sanitary facilities, or one for use by each sex separately; and (b) one additional closet for use by both sexes for each additional 50 closets, or part of 50 closets, in excess of the first 100 closets

46.8 SHOWERS FOR HANDICAPPED PERSONS

Definition of "modified shower"

(1) In this regulation, "modified shower" means a shower which is modified in accordance with -

- (a) AS 1428; and
- (b) this regulation,

for wheelchair users.

Where required

(2) Modified showers shall be provided in a class of building specified in column 1 of Table 46.8(2) as specified in column 2 of the table opposite the class of building so specified.

Modified showers

(3) For the purposes of sub-regulation (1)(b), a modified shower shall have -

- (a) a dressing space which is separated from the shower recess by a curtain or sliding screen with a flush floor track;

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- (b) the dressing space required under paragraph (a) fitted with a clothes hanging device not less than 1.4 m in height and not more than 1.5 m in height above the floor surface;
- (c) the floor surface of the shower recess self-draining without a kerb and continuous with the adjoining floor surface;
- (d) the floor surface inside the shower recess impervious to water and with a hard, level, non-slip finish;
- (e) where a glass screen forms part of the shower recess or dressing space - the glass screen comply with AS 1288 Parts 1 to 3;
- (f) where a door is fitted to the modified shower - have the door openable from the outside in the case of an emergency;
- (g) a fixed or removable self-draining, non-slip seat provided inside the shower recess not less than 400 mm in height and not more than 500 mm in height above the floor surface;
- (h) water taps with lever or capstan handles and water delivered through a central mixing bib;
- (j) hot water taps placed to the left of cold water taps;
- (k) a horizontal handrail -
 - (i) fixed to each of the side walls; and
 - (ii) not more than 900 mm in height above the floor surface;
- (m) a soap-holder -
 - (i) fully recessed into the shower wall opposite the seat referred to in paragraph (g);
 - (ii) not less than 700 mm in height and not more than 1.2 m in height above the floor surface; and
 - (iii) situated so that it can be reached by a person sitting on the seat referred to in paragraph (g);

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- (n) the shower controls and fittings of a shower situated -
 - (i) on the wall opposite the seat referred to in paragraph (g);
 - (ii) not less than 900 mm in height and not more than 1.2 m in height above the floor surface; and
 - (iii) so that they can be reached by a person sitting on the seat referred to in paragraph (g);
- (p) a portable shower head attached to a flexible hose installed to enable a person using the shower to shower whilst sitting or standing, and a fitting provided to allow the shower head to be attached at various angles at 900 mm, 1.5 m and 1.9 m in height above the floor surface; and
- (q) thermostatic mixing valves installed for the shower.

TABLE 46.8(2)

Class of building	Number of modified showers
III	(a) a minimum of one modified shower in each sole-occupancy unit to which regulation 24.47 applies; or (b) one modified shower for each 20, or part of 20, showers where the showers are provided in common
VII and VIII	Where showers are required by legislation other than this Code to be provided, not less than one modified shower for each 20, or part of 20, showers so required by that other legislation

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PART 47 - WEATHERPROOFING, DAMP-PROOFING AND FLASHING

47.1 ROOFS AND WALLS

Roof to be waterproof

(1) Subject to sub-regulation (3), the roof of a building shall be constructed so as to prevent the penetration of rain or other water to the inner parts of the building.

External walls to be waterproof

(2) Subject to sub-regulation (3), the external walls, including the openings around windows and doors in the external walls, of a building shall be constructed so as to prevent the penetration of rain or other water to the inner parts of the building.

Exemptions from waterproofing

(3) The Building Controller may grant an exemption from all or any of the requirements of sub-regulation (1) or (2) for -

- (a) a Class VII, VIII or X building where he is satisfied that there is no necessity for the building to comply with the sub-regulation; or
- (b) a garage, tool shed, or part of a building used for a closet fixture or the like which forms part of a building used for other purposes.

47.2 CONCRETE ROOFING TILES

With weathering checks

(1) A roof that is covered with concrete roofing tiles with weathering checks complies with regulation 47.1(1) where the tiles -

- (a) comply with AS 1759; and
- (b) are fixed in accordance with AS 1760.

Without weathering checks

(2) A roof that is covered with concrete roofing tiles without weathering checks complies with regulation 47.1(1) where the tiles -

- (a) comply with AS 1757; and
- (b) are fixed in accordance with AS 1758.

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47.3 TERRACOTTA ROOFING TILES

A roof that is covered with terracotta roofing tiles complies with regulation 47.1(1) where the tiles -

- (a) comply with AS 2049; and
- (b) are fixed in accordance with AS 2050.

47.4 CORRUGATED ASBESTOS-CEMENT ROOF

A roof that is covered with corrugated asbestos-cement sheeting complies with regulation 47.1(1) where the sheeting -

- (a) complies with AS 1611; and
- (b) is fixed in accordance with AS 1639.

47.5 METAL SHEET ROOFING WITHOUT TRANSVERSE LAPS

A roof that is covered with metal sheet roofing without transverse laps complies with regulation 47.1(1) where it is designed and installed in accordance with AS 1562.

47.6 PLIABLE ROOF SARKING

Australian Standards

(1) Subject to sub-regulation (2), pliable roof sarking used under roof or wall coverings shall comply and be fixed in accordance with -

- (a) AS 1736; or
- (b) AS 1903 and AS 1904,

whichever is applicable to it.

Flammability indices

(2) Pliable roof sarking is not required to comply with the flammability indices specified in the Australian Standards referred to in sub-regulation (1) but is required to comply with the flammability indices applicable under Part 16 to it.

47.7 DAMP-PROOFING OF CERTAIN ROOMS

Floors of certain compartments

(1) The floor surface of a building or part of a building which contains a bath, shower, slop sink, laundry, closet fixture or the like shall be of a material impervious to moisture and, except in the case of a

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building or part of a building which contains an earth-closet fixture, the junctions with the walls of such a floor shall be treated so as to prevent the penetration of moisture into the walls.

Walls which adjoin baths and showers

- (2) The walls -
 - (a) which immediately adjoin or are behind a bath; or
 - (b) of a shower compartment, including the walls, if any, about an open shower,

shall be finished to not less than 1.8 m in height above the floor with cement render, ceramic tiles or other approved impervious finish.

Walls of closets and urinals

(3) The walls of a building or part of a building which contain a closet fixture, other than a Class I, II or IV building, shall be finished internally to not less than 1.8 m in height above the floor with cement render, ceramic tiles or other approved impervious finish.

47.8 DAMP-PROOF COURSES AND DAMP-PROOF MORTARS

Use of damp-proof courses, &c.

(1) Subject to sub-regulation (2), damp-proof courses shall be laid, or damp-proof mortars used, in masonry walls and piers in a building, other than a building the subject of an exemption under regulation 47.1(3), in such a manner that moisture from the ground -

- (a) is prevented from reaching the lowest floor timbers and the walls above the lowest floor joists;
- (b) is prevented from reaching the walls above the damp-proof course; and
- (c) in the case of a suspended floor constructed of a material other than timber - is prevented from reaching the underside of the floor or the supporting beams or girders.

Use of termite shields

(2) Where approved termite shields are used on a pier, a damp-proof course or damp-proof mortar is not required in the pier.

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Overlap of damp-proof courses

(3) Where, under sub-regulation (1), a damp-proof course is used, it shall be overlapped at each joint by not less than 100 mm.

47.9 MATERIALS FOR DAMP-PROOF COURSES

A damp-proof course used in a building shall be -

(a) uncovered annealed lead which is not less than -

(i) 99.8% in purity; and

(ii) 9.7 kg/m² in mass;

(b) uncovered copper which is not less than -

(i) 98% in purity;

(ii) 2.8 kg/m² in mass; and

(iii) 314 um in thickness;

(c) where the wall of the building for which the damp-proof course is provided is not more than 7.8 m in height above the level of the damp-proof course - felt based bituminous asphalt which -

(i) is not less than 0.53 kg/m² in mass; and

(ii) has a finished thickness of not less than 2.54 mm and not more than 3.05 mm;

(d) polythene film which complies with AS 1326 and which is not less than 250 um in thickness prior to embossing;

(e) annealed sheet aluminium not less than -

(i) 98% in purity; and

(ii) not less than 101 um in thickness,

and which -

(iii) has a bitumen coat; and

(iv) is sheeted with polythene film;

(f) bituminous coated metal which complies with AS Int. 326;

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- (g) bitumenous coated fibre felt which complies with AS Int. 327; or
- (h) other approved materials.

47.10 DAMP-PROOFING OF FLOORS ON THE GROUND

Use of damp-proof courses, &c.

(1) Subject to sub-regulation (2), where a concrete slab or paved floor is laid on the ground or on filling, moisture from the ground shall be prevented from reaching the inner surfaces of the floor and adjoining walls by the insertion of damp-proof courses, membranes or other approved damp-proofing means.

Exemptions

(2) The Building Controller may exempt from sub-regulation (1) -

- (a) a Class VII, VIII or X building where he is satisfied that there is no necessity to prevent moisture from reaching the inner surfaces of the floor and adjoining walls of the building;
- (b) a garage, tool shed, or part of a building used for a closet fixture or the like which forms part of a building used for other purposes;
- (c) a building in relation to which he is satisfied that the condition of the subsoil, or the construction of the floor, is such that moisture will be prevented from reaching the inner surfaces of the floor or walls of the building without the insertion of damp-proof courses or membranes or the use of other approved damp-proofing means; or
- (d) the base of a stair, lift or like shaft which is, in his opinion, satisfactorily drained by gravitational or mechanical means.

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PART 48 - TERMITE PREVENTION

48.1 APPLICATION

A reference in this Part to a building is a reference to a building -

- (a) in which the walls or floors of the building are of timber-frame construction; or
- (b) constructed of a material, other than timber-frame construction, which, in the opinion of the Building Controller, may be subject to the hazard of termite attack.

48.2 PROTECTION

A building shall comply with -

- (a) AS 1694; or
- (b) AS 2057.

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PART 49 - ROOM SIZES AND HEIGHTS

49.1 SIZES OF HABITABLE ROOMS IN RESIDENTIAL BUILDINGS

Application

(1) The minimum floor areas specified in this regulation shall not apply to or in relation to a fully-enclosed kitchen.

Basic minimum area

(2) Subject to sub-regulations (3), (4) and (5), a habitable room in a Class I, II, III or IV building shall have a floor area of not less than 7.5 m².

One-room sole-occupancy units

(3) Where a sole-occupancy unit contains only one habitable room, the habitable room shall have a floor area of not less than 18.5 m².

Sole-occupancy units which contain more than one habitable room

(4) Where a sole-occupancy unit contains more than one habitable room -

- (a) not less than one habitable room shall have a floor area of not less than 14 m²; and
- (b) not less than one other habitable room shall have a floor area of not less than 11 m².

Habitable rooms incorporating cooking facilities

(5) Where an alcove or other space within a habitable room is provided for the preparation and cooking of food instead of a fully-enclosed kitchen, the floor area otherwise required under this regulation for the room shall be increased by 3 m².

49.2 SIZES OF BATHROOMS AND SHOWER ROOMS IN CLASS I, II, III AND IV BUILDINGS

Basic minimum areas

(1) A bathroom or shower room in a Class I, II, III or IV building shall have a floor area of not less than -

- (a) in the case of a bathroom, subject to paragraph (b) - 2.2 m²;
- (b) in the case of a bathroom provided with a bath and a shower that is not above the bath - 2.8 m²; and
- (c) in the case of a shower room - 1.1 m².

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Additional facilities installed

(2) Where a closet fixture is installed in a bathroom or shower room referred to in sub-regulation (1), or the bathroom or shower room is designed to accommodate clothes washing facilities or a clothes-drying cabinet, the floor area otherwise required under this regulation for the bathroom or shower room shall be increased by -

- (a) in the case of the installation of a closet fixture - 0.7 m^2 ;
- (b) in the case of a washing machine without washtubs, where the facility is additional to the provision elsewhere of the clothes washing facilities required by Part 46 - 0.7 m^2 ;
- (c) in the case of a washing machine and washtub - 1.1 m^2 ; and
- (d) in the case of a clothes-drying cabinet - 0.5 m^2 .

49.3 SIZE OF PART OF BUILDING WHICH CONTAINS CLOSET FIXTURE

A part of a building which contains a closet fixture shall be not less than 1.1 m^2 in floor area and 810 mm in width.

49.4 HEIGHT OF ROOMS IN CLASS I, II, III AND IV BUILDINGS

Class I, II, III and IV buildings

(1) Subject to sub-regulation (2), the height, in a Class I, II, III or IV building, of -

- (a) a habitable room - shall be not less than 2.4 m; and
- (b) a bathroom, shower room, closet fixture or laundry - shall be not less than 2.1 m.

Reduced height

(2) The Building Controller may permit a room referred to in sub-regulation (1) to be less than 2.4 m in height or 2.1 m in height, as the case may be, over a part of the room in relation to which he is satisfied that the reduced height will not unduly interfere with the intended functioning of the room.

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49.5 HEIGHTS OF ROOMS IN CLASS V, VI, VII, VIII AND IX BUILDINGS

Class V, VI, VII, VIII and IX buildings

(1) Subject to regulation 49.6, a part of a Class V, VI, VII, VIII or IX building, not otherwise required to have a minimum height, shall have a height of not less than -

- (a) in the case of a part of such a building used as a bath, shower, closet fixture or the like, or a corridor, hallway, lobby, clothes drying room or other part of a specialized nature occupied neither frequently nor for extended periods - 2.1 m; and
- (b) in the case of a part of such a building not referred to in paragraph (a) - 2.4 m.

Parking areas

(2) Subject to regulation 49.6, a part of a building used or intended to be used principally for the parking of wheeled vehicles, other than an area set aside as loading space, shall be not less than 2.1 m in height at any part, including the underside of ceilings, beams, ducts, sprinkler heads, service pipes, lighting fixtures and the like.

Certain trades

(3) Subject to regulation 49.6, a part of a building used as a bakehouse, a butchers' smallgoods house, or for ham and bacon curing, fish curing, meat preserving, jam making, fruit preserving, dairy produce manufacturing or like trades shall be not less than 3.6 m in height.

Variation of requirements

(4) The Building Controller may, as he thinks fit, vary all or any of the requirements of this regulation applicable to a Class VIII building.

49.6 CEILINGS AND PROJECTIONS

The beams, ducts, sprinkler heads, service pipes, lighting fixtures and the like in a Class V, VI, VII, VIII or IX building may project below the minimum height specified in regulation 49.5 where the total area in plan of such projections is not more than 20% of the floor area of the room in which the beams, ducts, sprinkler heads, service pipes, lighting fixtures and the like are situated but, in any case, no such beam, duct, sprinkler head, service pipe, lighting fixture or the like shall project below 2.1 m in height measured vertically from the floor of the room in which it is situated.

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PART 50 - LIGHT AND VENTILATION

Division 1 - Lighting

50.1 PROVISION OF NATURAL LIGHT

Where required

(1) Subject to regulation 50.5, natural lighting shall be provided -

- (a) in a Class I, II or IV building - to all habitable rooms;
- (b) in a Class III building - to all bedrooms and dormitories; and
- (c) in a Class IX building - to all bedrooms, dormitories, wards and other rooms used for sleeping purposes.

Methods and required extent of natural lighting

(2) Natural lighting required by sub-regulation (1) shall be provided by means of windows which have an aggregate light transmitting area of not less than one-tenth of the floor area of the room to which it provides the natural lighting.

Measurement of areas of windows

(3) For the purposes of sub-regulation (2), the light transmitting areas of a window shall be measured exclusive of framing members, glazing bars and other obstructions on the window.

50.2 SITUATION OF WINDOWS

General

- (1) A required window of a room shall face -
 - (a) a court or space open to the sky; or
 - (b) an open verandah, open car port or the like.

Windows in Class II, III, IV and IX buildings

(2) Subject to sub-regulation (3), a window in a Class II, III, IV or IX building which faces -

- (a) the boundary of a site which adjoins the site on which the building is situated; or
- (b) a wall of the building or the wall of another building on the same site of the building,

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shall be not less than -

- (c) 1.5 m; or
- (d) 55% of the square root of the height of the wall in which the window is situated, measured in metres from its sill,

in horizontal distance, whichever is the greater, from the boundary or wall, as the case may be.

Exemption

(3) Where the Building Controller is satisfied that compliance with sub-regulation (2) would create undue problems in the design of a building, he may permit a horizontal distance less than that required under that sub-regulation but, in any case, not less than 1.2 m, between a window and the boundary or wall which it faces where he is satisfied that the objects of that sub-regulation will be attained as effectually.

50.3 ARTIFICIAL LIGHTING

Where required

(1) Subject to sub-regulation (2), where in a room other than a room referred to in regulation 50.1(1) natural lighting by means of windows is, in the opinion of the Building Controller, not provided to a standard equivalent to that required by regulation 50.1 for rooms referred to in regulation 50.1, a system of artificial lighting shall be provided to -

- (a) in the case of a Class I or IV building - each part of the building which contains a closet fixture, bath, shower, airlock or laundry;
- (b) in the case of a Class II building - each part of the building which contains a closet fixture, bath, shower, airlock, laundry, common stairway or other part of the building designed for the common use of the occupants of the building; and
- (c) in the case of a Class III, V, VI, VII, VIII, IX or X building - each room intended to be occupied by a person for any purpose, and all corridors, lobbies, internal stairways or other parts intended for internal movement or egress.

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Exemption for certain rooms

(2) The Building Controller may exempt a room otherwise subject to sub-regulation (1) from the requirements of that sub-regulation where he is satisfied that by reason of -

- (a) the nature of the use of the room; or
- (b) the periods of occupation of the room,

there will be no undue hazard to occupants seeking egress from the room in the event of an emergency.

Installation of artificial lighting

(3) Where a system of artificial lighting is required under this regulation to be installed in a room, the installation of the artificial lighting shall be in accordance with AS 1680.

50.4 ARTIFICIAL LIGHTING OF STAIRWAYS AND RAMPS

A required stairway or ramp in a building shall be provided with artificial lighting by means of separate electrical wiring circuits from the main switchboard of the building for the exclusive use of the stairway or ramp.

50.5 NATURAL LIGHTING FROM ADJOINING ROOMS

Conditions

(1) A room in a Class I, II or IV building, or in a sole-occupancy unit in a Class III building, may be lighted by means of a glazed area or other opening which faces directly into an adjoining room, including an enclosed verandah, where -

- (a) subject to sub-regulation (2) - the glazed area or other opening is not less in area than one-tenth of the floor area of the first-mentioned room;
- (b) subject to sub-regulation (2) - the adjoining room is provided with windows which have an aggregate light transmitting area of not less than one-tenth of the combined floor areas of the 2 rooms; and
- (c) in the case of a Class II, III or IV building - the adjoining room is within the same sole-occupancy unit.

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Reduction in size of glazed areas

(2) The glazed area referred to in sub-regulation (1)(a) or the light transmitting area referred to in sub-regulation (1)(b) may be reduced by the area of a window, if any, in the room first-mentioned in sub-regulation (1) transmitting natural light directly to that room.

Division 2 - Ventilation

50.6 WHERE VENTILATION REQUIRED

Certain rooms

(1) Subject to sub-regulation (2), a habitable room, office, shop, factory, workroom, or a part of a building which contains a closet fixture, bath, shower, laundry or other room designed to be occupied by a person for any purpose, shall be provided with -

- (a) natural ventilation which complies with regulation 50.7; or
- (b) a mechanical ventilation or air-conditioning system which complies with regulation 55.3.

Exemption

(2) The Building Controller may exempt a room referred to in sub-regulation (1) from the requirements of that sub-regulation where he is satisfied that the exemption will not result in conditions that are detrimental to the health of the occupants of the room.

50.7 NATURAL VENTILATION

Methods and required extent of natural ventilation

(1) Subject to this regulation, for the purposes of regulation 50.6(1)(a), natural ventilation in a room referred to in that regulation shall be provided by means of permanent openings, or windows, doors or other devices in the room capable of being opened, and in relation to which the aggregate permanent openings or openable sizes are -

- (a) not less than one-twentieth of the floor area of the room; and
- (b) the net area available for the passage of air through -
 - (i) the permanent openings; or
 - (ii) the windows, doors or other openable devices where opened to their designed maximum extent.

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Situation of natural ventilation devices

(2) A required natural ventilation device shall, unless otherwise required by this Code, open to -

- (a) a court, vent shaft or space open to the sky; or
- (b) an open verandah, open car port or the like.

Construction of vent shafts, &c.

(3) A vent shaft or fully enclosed court which serves as the source of required natural ventilation to an adjoining room shall -

- (a) be open to the sky;
- (b) where it has a cross-sectional area of less than 18 m^2 - be provided with permanent ventilation openings comprising one or more horizontal air intakes or passages which -
 - (i) communicate directly with a street or open space which leads to a street;
 - (ii) are situated at or below the level of the lowest required natural ventilation device serviced by the vent shaft or fully enclosed court;
 - (iii) have an aggregate cross-sectional area of not less than 0.5 m^2 or 5% of the horizontal cross-sectional area of the vent shaft, whichever is the greater; and
 - (iv) are not less than 0.1 m^2 in cross-sectional area in any one air intake or passage; and
- (c) have an internal horizontal dimension of not less than 1.2 m and an internal horizontal cross-sectional area of not less than 1.5 m^2 .

Natural ventilation of certain rooms in Class I, II, III and IV buildings

(4) A room in a Class I, II or IV building, or in a sole-occupancy unit in a Class III building, may be ventilated by means of a permanent opening, or a window, door or other device capable of being opened, which faces directly into an adjoining room, including an enclosed verandah, where -

- (a) subject to sub-regulation (5) - the permanent opening, window, door or other device has a ventilating area of not less than one-twentieth of the floor area of the first-mentioned room;

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- (b) subject to sub-regulation (5) - the adjoining room is provided with a permanent opening or a window, door or other device which has a ventilating area of not less than one-twentieth of the combined floor areas of the 2 rooms; and
- (c) in the case of a Class II, III or IV building - the adjoining room is within the same sole-occupancy unit.

Reduction of size of ventilating areas

(5) A ventilating area referred to in sub-regulation (4)(a) or (b) may be reduced by the ventilating area of a permanent opening, or a window, door or other device capable of being opened, if any, in the room first-mentioned in sub-regulation (4) which opens directly to the exterior of the building in which the room is situated.

Ventilation of partitioned parts and rooms in certain buildings

(6) A partitioned part of, or room in, a Class V, VI, VII, VIII or IX building may be ventilated by means of a permanent opening, or an openable device, excluding a door, which faces into another room that is ventilated in accordance with sub-regulations (1) and (2) where -

- (a) the opening or openable device has an airway of not less than one-tenth of the floor area of the partitioned part or room; and
- (b) in measuring the area of the opening or openable device for the purposes of this sub-regulation - any part, if any, of the opening or openable space that is more than 3.6 m in height above the level of the floor is not taken into account in the calculations.

Restriction on position of room which contains closet fixture

(7) A room which contains a closet fixture shall not open directly into a kitchen and, except in the case of a Class I or IV building, or in a sole-occupancy unit in a Class II or III building, shall not open directly into -

- (a) a room for the storage or the consumption of food; or
- (b) a dormitory or bedroom for a number of unrelated persons.

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Airlocks

(8) Where a room which contains a closet fixture is prohibited under sub-regulation (7) from opening directly into a kitchen, room for the storage or the consumption of food or a dormitory or bedroom for a number of unrelated persons, access shall be by means of an airlock, hallway or other room which -

- (a) in the case of a Class I or IV building or a sole-occupancy unit in a Class II or III building - has a floor area of not less than 1.1 m²; and
- (b) in the case of a Class V, VI, VII or VIII building -
 - (i) has a floor area of not less than 1.1 m²; and
 - (ii) is fitted with self-closing doors at all access doorways.

50.8 ARCADE VENTILATION

Where a shop, room or like part of a building opens onto an arcade, the Building Controller may, subject to such conditions as he thinks fit, exempt the shop, room or like part from the requirements of this Division applicable to it.

50.9 SUB-FLOOR VENTILATION

Requirements

(1) Subject to sub-regulation (2), where the lowest floor of a building is of timber-frame construction, a space shall be provided between the underside of each joist and bearer of the timber-frame construction and the ground surface, which space shall be -

- (a) ventilated and cross-ventilated by means of evenly distributed openings in the external walls of the building and with an unobstructed area of not less than 2.1 m²/m run of external wall; and
- (b) not less than 200 mm in depth in each part.

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Reduction or increase in requirements

(2) The Building Controller may, in relation to a building referred to in sub-regulation (1) -

(a) approve a reduction of the area of the openings, or the depth of the space, required under that sub-regulation, where he is satisfied that by reason of -

(i) the nature of the site of;

(ii) the design of; or

(iii) the provision of an impervious cover over the ground surface beneath,

the building, undue deterioration of the floor timbers of the building will not occur as a result of such reduction; or

(b) require an increase in the area of the openings required under that sub-regulation where he is of the opinion that by reason of -

(i) the nature of the site; or

(ii) the design,

of the building, the increase is necessary to prevent undue deterioration of the floor timbers of the building.

Position of sub-floor ventilation openings in cavity walls

(3) The openings referred to in sub-regulation (1)(a) shall, in cavity wall construction, be provided in the outer leaf of the wall, and openings of the same area shall be provided in the inner leaves in positions as near as practicable to those in the outer leaf.

Openings in internal walls in sub-floor area

(4) An internal wall constructed in the space referred to in sub-regulation (1) shall be provided with evenly distributed openings which have an aggregate area of not less than 4.2 m²/m run of wall.

50.10 PUBLIC GARAGES AND PARKING STATIONS

A storey of a public garage or parking station shall be provided with -

(a) a mechanical ventilation or air-conditioning system which complies with regulation 55.3; or

(b) an approved system of permanent natural ventilation.

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PART 51 - SPECIAL HEALTH AND AMENITY
REQUIREMENTS FOR CERTAIN ROOMS

51.1 FOOD PREMISES

Requirements

(1) Subject to sub-regulation (2), a Class V, VI, VII, VIII or IX building, an assembly ground, gymnasium, open air theatre, public swimming pool or the like, or a part of such a construction, used -

(a) for the preparation of food; or

(b) as a retail food outlet,

shall comply with the requirements of Table 51.1(1) and Specification No. 51.1(1) applicable to it.

Exemption

(2) The Building Controller may exempt a Class V, VI, VII, VIII or IX building, an assembly ground, gymnasium, open air theatre, public swimming pool or the like, or a part of such a construction, otherwise subject to sub-regulation (1), from all or any of the requirements of that sub-regulation.

Mechanical exhaust systems

(3) A rangehood, and other equipment required, for the removal of heat, smoke and cooking vapours from a building shall be installed in accordance with AS 1668 Parts 1 and 2.

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TABLE 51.1(1)

RELATES TO CLAUSE NUMBERS IN SPECIFICATION No. 51.1(1)

Building	Division 1 finishes for:	Division 2 washing facilities for:	Special requiremen			
	Walls	Floors	Ceilings	Utensils	Persons	
1. Preparation of food -						
Kitchens and takeaway shops, including sandwich bars, milk bars, pizza bars and the like	3(a)	4	5	10(a)	10(c)	
Butchers shops and fish shops	3(a)	4	5	10(a)	10(c)	+ 1 wash basin in retail portion for staff use
Bakehouses	3(a)	5	5	10(a)	10(c)	+ Separat staff change room
2. Retail food outlets -						
Grocery shops, deli- catessens, vegetable and fruit shops and the like	3(a)	4(a), (b), (d) and (e)	5	10(b)	10(c)	

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SPECIFICATION No. 51.1(1)

FINISHES AND EQUIPMENT

FOOD PREMISES

Division 1 - Preliminary

1. APPLICATION

A reference in this Specification to a building is a reference to a Class V, VI, VII, VIII or IX building, an assembly ground, gymnasium, open air theatre, public swimming pool or the like, or a part of such a construction, referred to in regulation 51.1(1).

2. INTERPRETATION

Terms used

(1) For the purpose of this Specification -

- (a) a building used for the preparation of food includes a kitchen, takeaway shop, sandwich bar, milk bar, bakehouse, cake shop, pizza bar, butcher shop, fish shop and the like; and
- (b) a retail food outlet includes a grocery shop, delicatessen, vegetable and fruit shop and the like where the preparation and manufacture of food is not involved, but does not include a building used for the preparation of food.

Specification subject to Table 51.1(1)

(2) This Specification is subject to the requirements of Table 51.1(1).

Division 2 - Finishes

3. WALLS

A wall of a building shall -

- (a) be finished to not less than -
 - (i) 1.8 m in height above the floor; or
 - (ii) 300 mm in height above all working surfaces, including wash basins, sinks and the like,
- with cement render, ceramic tiles or other approved impervious surface;

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- (b) be free of fixing screws, open joints, cracks or crevices;
- (c) where the finish referred to in paragraph (a)(i) of the wall is 1.8 m in height only - have the finish flush with the adjoining surface;
- (d) have joints between sheets or finishes filled and finished flush with the adjoining surfaces;
- (e) not have coverstrips, architraves, skirting boards, rails or like projections;
- (f) have an impervious material at the rear of a working appliance continuous from the top of the exhaust canopy which serves the appliance to its junction with the floor;
- (g) where a cooking appliance is sealed to the wall - have an impervious material lapped over the top edge of the appliance to form a grease, dust and vermin proof seal; and
- (h) have its intersection with other walls and the ceiling tightly jointed and sealed to exclude dust and vermin.

4. FLOORS

A floor of a building shall -

- (a) have a smooth, continuous, durable and impervious finish laid to an even surface free from cracks and crevices;
- (b) have a surface which is non-slip, non-abrasive, resistant to acids, capable of withstanding heavy-duty operation and scouring with steam, hot water, soap and detergent;
- (c) be graded and drained to an approved floor-waste;
- (d) have its junctions with walls, upstands, plinths and the like coved to a radius of not less than 25 mm; and
- (e) have no silt traps or grease arrestors.

5. CEILINGS

A ceiling of a building shall have a smooth, continuous, durable and impervious finish free from joints, cracks, crevices or other openings.

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6. WINDOW OPENINGS

A window sill of a building shall be -

- (a) not less than 300 mm in height above the top of any working surface; and
- (b) splayed at an angle of not less than 45° into the food preparation area.

7. INSECT PROOFING

For the purposes of insect-proofing a building -

- (a) a door, window or other opening in the building shall be protected by means of fly-wire gauze of approved mesh or by other approved means;
- (b) an external door in the building shall be self-closing; and
- (c) a fly-wire screen to a window opening in the building shall be easily removable for cleaning.

8. LIGHTING

Where a light fitting is installed in a building, it shall be mounted flush with the adjoining surface finish.

9. ANCILLARY

Storage parts

(1) The finish of a storage part, whether of masonry or framed construction, of a building is not required to comply with this Specification where -

- (a) the floor of the part is of a smooth, durable and impervious finish, coved to a radius of not less than 25 mm at its junctions with walls, upstands, plinths and the like; and
- (b) the intersection of the walls and ceiling of the part is tightly jointed and sealed to exclude dust and vermin.

Separate parts

(2) Separate parts shall be provided in a building for the storage of -

- (a) materials and equipment used for cleaning purposes; and
- (b) garbage, including the washing and storage of garbage receptacles.

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Parts used for the storage of garbage, &c.

(3) A part of a building used for the purpose referred to in sub-clause (2)(b) shall have -

- (a) hot and cold water taps for the washing of garbage receptacles;
- (b) drains fitted with approved grease and silt traps with screens which prevent particular waste matter larger than 10 mm from entering the drainage system;
- (c) provision for waste matter caught in the grease and silt traps referred to in paragraph (b) to be stored in separate disposable containers which shall be disposed of daily after the cleaning of the traps;
- (d) the area used for the storage of garbage and the washing and storage of garbage receptacles roofed to prevent the ingress of rainwater into the drainage system; and
- (e) each opening into it fly-screened.

Division 3 - Fittings and Equipment

10. WASHING FACILITIES

The fittings and equipment for the purposes of washing in a building shall be -

- (a) a double bowl sink with a bowl size of not less than 450 mm x 300 mm x 300 mm in depth, fitted with draining areas, or a beat-operated mechanical washing machine; or
- (b) a single bowl sink with a bowl size of not less than 450 mm x 300 mm x 300 mm in depth, fitted with draining areas; and
- (c) one wash basin, fixed in an approved position, per 10 employees or part of 10 employees.

11. HOT WATER SYSTEMS

A hot water system in a building shall -

- (a) have a capacity not less than double the capacity of the washing facilities which it serves;
- (b) be capable of supplying at all times water at a temperature of not less than 75°C;

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- (c) unless otherwise approved, be installed within a part of the building separate from the food preparation portion, if any, of the building; and
- (d) where the installation within the food preparation part of the building of the system is approved - the system, with the exception of booster units to mechanical washing machines, if any, shall be fixed in a position above the working surfaces.

12. HOODS

Wall type hoods

- (1) A wall type hood in a building shall be -
 - (a) mounted not less than 1.8 m in height above the finished floor level and extend not less than 150 mm in horizontal length beyond the perimeter of the appliance which it serves, measured from the internal edge of the grease gutter of the hood;
 - (b) provided with a condensation gutter around the base of the hood, graded to a 25 - 30 mm brass cleaning screw; and
 - (c) fixed to the surfaces to which it is attached so as to form a dust and vermin proof seal.

Island type hoods

- (2) An island type hood in a building shall -
 - (a) extend not less than 300 mm in horizontal length beyond the perimeter of the appliance which it serves, calculated from the exterior edge of the appliance to the inside edge of the grease gutter of the hood; and
 - (b) fixed to the surfaces to which it is attached so as to form a dust and vermin proof seal.

Inbuilt lateral draught hoods

(3) An inbuilt lateral draught hood in a building shall be fixed in accordance with its manufacturer's instructions.

13. FILTRATION

Mechanical ventilating exhaust system

(1) Subject to sub-clause (3), a mechanical ventilating exhaust system in a building shall be provided with a means of grease filtration.

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Installation of filter

(2) A filter for the purposes of sub-clause (1) shall be -

- (a) of non-combustible material easily removable for cleaning purposes;
- (b) fitted with a removable drip tray to the underside of the filter; and
- (c) fitted at the exhaust openings of the hood which it serves.

Exemption

(3) The Building Controller may exempt a mechanical ventilating exhaust system from the requirements of sub-clause (1) where it is installed over appliances such as bain-maries, water heaters and the like where the products of emission are principally heat or water vapour.

14. PIPES

A pipe, including a conduit, in a building shall -

- (a) be installed in or behind the floors, walls and ceilings of the building or contained within shafts finished flush with the adjoining finished surfaces;
- (b) where the installation of a pipe on wall surfaces has been approved - be mounted not less than 25 mm in height from the surface to which it is attached and not less than 100 mm in height above the finished floor level; and
- (c) not have its inspection or cleaning eyes, where they contain soil or waste matter, situated within the food preparation portion, if any, of the building.

15. SHELVING

A shelf in a building shall be -

- (a) smooth, durable and with surfaces impervious to moisture; and
- (b) mounted not less than 300 mm in height above the finished floor level.

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16. BENCHES

A bench in a building shall -

- (a) be smooth, durable and impervious to moisture;
- (b) have joints constructed to form a dust and vermin proof seal; and
- (c) where abutting walls - be flashed with a smooth, durable and impervious material to not less than 300 mm in height above the top of any working surface.

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PART 52 - NOISE TRANSMISSION

52.1 APPLICATION

A reference in this Part to a building is a reference to a Class II building.

52.2 SOUND INSULATION OF WALLS AND FLOORS

Between sole-occupancy units and certain areas

(1) Subject to sub-regulation (2), a wall or floor which divides separate sole-occupancy units, or a wall or floor which divides a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, hallway or the like, in a building shall have a sound transmission class of not less than 45.

Between bathroom, laundry or kitchen and habitable room in adjoining sole-occupancy units

(2) A wall which divides a bathroom, laundry or kitchen in a sole-occupancy unit in a building from a habitable room, other than a kitchen, in an adjoining sole-occupancy unit in the building shall -

- (a) have a sound transmission class of not less than 50; and
- (b) be constructed in 2 or more separate leaves, without rigid mechanical connection other than at its periphery, such that a connection between the leaves, other than at the periphery, is by means of devices which incorporate resilient plugs or mounting except that, in the case of a masonry wall, wire ties in accordance with AS Int. 324 may be used.

Where requirements satisfied

- (3) A wall which is -
 - (a) 2 leaves of 90 mm in total thickness brick masonry and which has -
 - (i) all joints filled solid with mortar; and
 - (ii) an air space of not less than 40 mm between the leaves;

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(b) 190 mm in total thickness concrete block masonry and which has -

- (i) each face of the blocks fitted with 50 mm x 50 mm in thickness timber battens, spaced at not more than 610 mm centres, screw-fixed into resilient plugs with rubber inserts;
- (ii) the space between the battens completely filled with mineral or glass wool blanket or batts not less than 50 mm in thickness; and
- (iii) the outer face of the studs finished with plasterboard not less than 9.5 mm in thickness or other material which is not less than 7.3 kg/m² in mass per unit area; or

(c) 110 mm in total thickness brick masonry and which has -

- (i) each face rendered 12 mm in thickness;
- (ii) 50 mm x 12 mm in thickness timber battens, spaced at not more than 610 mm centres, fixed to each face but not recessed into the render;
- (iii) one layer of 12.7 mm in thickness softboard nailed to the battens; and
- (iv) 6.3 mm in thickness medium density hard-board adhesive fixed to the softboard,

satisfies the requirements of sub-regulation (2).

52.3 DUCTS NOT TO PENETRATE CERTAIN WALLS

A duct shall not pass through a wall which divides a habitable room, other than a kitchen, in one sole-occupancy unit in a building from a room which contains a bath, shower, laundry or kitchen in an adjoining sole-occupancy unit in the building.

52.4 SOIL AND WASTE PIPES TO BE SEPARATED

Application

(1) This regulation does not apply to or in relation to those parts of a soil or waste pipe which serve only one sole-occupancy unit in a building and situated wholly within the sole-occupancy unit.

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Type of separation required

(2) Soil and waste pipes in a sole-occupancy unit in a building, including such pipes that pass through a floor, shall be separated from the rooms of a sole-occupancy unit which immediately adjoins the first-mentioned sole-occupancy unit by construction which has the sound transmission class specified in Table 52.4(2) applicable to it.

Access door or panel

(3) Where a soil or waste pipe in a sole-occupancy unit in a building is required under sub-regulation (2) to be separated from the rooms of a sole-occupancy unit which immediately adjoins the first-mentioned sole-occupancy unit by construction referred to in that sub-regulation, an access door or panel -

- (a) shall not be provided in any part of the construction that immediately adjoins an habitable room, other than a kitchen; and
- (b) in any other part of the construction shall be -
 - (i) firmly fixed so as to overlap the frame or rebate of the frame by not less than 10 mm;
 - (ii) fitted with a sealing gasket along all edges; and
 - (iii) constructed of -
 - (A) wood, particle board or blockboard not less than 38 mm in thickness;
 - (B) dense asbestos - cement sheet not less than 9 mm in thickness; or
 - (C) approved material which is not less than 24.4 kg/m² in mass per unit area.

TABLE 52.4(2)

Type of room in sole-occupancy unit which immediately adjoins	Sound transmission class not less than:
Habitable room other than kitchen	45
Kitchen	30
Any other room	30

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52.5 ISOLATION OF PUMPS

A flexible coupling shall be used at the point of connection between the service pipes in a building and each circulating or other pump in the building.

52.6 SOUND TRANSMISSION CLASS INTERPRETATION

Subject to regulation 52.8, a form of construction required by this Part to have a certain sound transmission class value shall be one that has -

- (a) achieved not less than the required value where tested by a body or person referred to in regulation 10.3(2); or
- (b) under regulation 52.2(3) or 52.7, the required value.

52.7 CERTAIN CONSTRUCTION SATISFIES REQUIREMENTS

Where requirements satisfied

(1) For the purposes of this Part, a form of construction that -

- (a) is specified in column 1 of Table 52.7(1); and
- (b) complies with the requirements of sub-regulations (2), (3), (4), (5) and (6) applicable to it,

has the sound transmission class specified in column 2 of Table 52.7(1) opposite the form of construction so specified.

Masonry

(2) Masonry units shall be laid with all joints, including those between the masonry and adjoining construction, if any, filled solid.

Concrete slabs

(3) Joints between concrete slabs and adjoining construction, if any, shall be filled solid.

Fire-grade plasterboard

(4) Fire-grade plasterboard shall be a special grade as manufactured for use in fire-resisting construction and fixed so that -

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- (a) where one layer is required to be fixed to studs, it is screw-fixed to the studs with joints staggered on opposite faces;
- (b) where 2 layers are required, the first layer is fixed in accordance with paragraph (a) and the second layer is fixed so that the joints do not coincide with those of the first layer, and each sheet of the second layer is fixed to the first layer with nails, screws or adhesive, or a combination of those methods;
- (c) joints between sheets are taped and filled solid; and
- (d) joints between sheets and adjoining construction, if any, are filled solid.

Standard plasterboard

(5) Plasterboard other than plasterboard referred to in sub-regulation (4) shall, as far as practicable, be fixed in a like way to that described in sub-regulation (4) for plasterboard referred to in that sub-regulation.

Steel studs and perimeter members

- (6) Where a wall involves the use of steel studs -
 - (a) the studs shall be not less than -
 - (i) 0.60 mm in thickness and not more than 1 mm in thickness; and
 - (ii) 63.5 mm in depth;
 - (b) the studs shall be fixed to steel top and bottom plates of sufficient depth to permit secure fixing of the plasterboard; and
 - (c) all steel members at the perimeter of the wall shall be securely fixed to the adjoining structure and bedded to the adjoining structure in resilient compound or caulked so that there are no voids.

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TABLE 52.7(1)

SOUND TRANSMISSION CLASS TO APPLY
TO CERTAIN CONSTRUCTION

Construction	Sound transmission class not less than:
WALLS	
Solid clay or shale bricks 110 mm in thickness, rendered 12 mm in thickness on both sides	
Solid clay or shale bricks not less than 230 mm in total thickness	
Grey, common concrete bricks, 110 mm in thickness which complies with AS 1346 and is not less than 195 kg/m ² in total mass per unit area	
Dense concrete masonry blocks, 190 mm in thickness and not less than 215 kg/m ² in total mass per unit area	
Dense concrete masonry blocks, 140 mm in thickness and not less than 44 mm in wall thickness and with -	
(a) 50 mm x 50 mm in thickness timber battens spaced at not more than 610 mm centres screw-fixed on one face of the blocks into resilient plugs with rubber inserts;	
(b) the face of the battens clad with 13 mm in thickness standard plasterboard; and	
(c) not less than 220 kg/m ² in total mass per unit area	
125 mm in thickness <i>in situ</i> concrete slab	
100 mm in thickness <i>in situ</i> dense concrete slab	
100 mm in thickness pre-cast concrete slab without joints	

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Table 52.7(1) - continued

Construction	Sound transmission class not less than:
Steel studs which have 2 layers of 16 mm in thickness fire-grade plasterboard fixed to each face	
Steel studs which have -	
(a) one layer of 13 mm in thickness fire-grade plasterboard fixed to one face with, before fixing, 50 mm in thickness mineral wool or glass-fibre blanket stapled to the back of each sheet so that the sheet is completely covered; and	
(b) 2 layers of 13 mm in thickness fire-grade plasterboard fixed to the other face	
Steel studs which have -	
(a) 50 mm in thickness mineral wool or glass-fibre batts wedged firmly between the studs;	
(b) one layer of 16 mm in thickness fire-grade plasterboard fixed to one face; and	
(c) 2 layers of fire-grade plaster- board fixed to the other face, the inner layer consisting of 13 mm in thickness fire-grade plasterboard and the outer layer consisting of 13 mm in thickness plasterboard	
FLOORS	
125 mm in thickness <i>in situ</i> concrete slab	
100 mm in thickness <i>in situ</i> dense concrete slab	
100 mm in thickness pre-cast concrete slab without joints	
Timber floor comprising -	
(a) timber joists not less than 175 mm x 50 mm;	

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Table 52.7(1) - continued

Construction	Sound transmission class not less than:
(b) tongued-and-grooved boards not less than 19 mm in thickness and secured to 75 mm x 50 mm in thickness battens between each joist and laid over joists but not affixed to the joists;	
(c) 25 mm in thickness glass-fibre blanket laid over entire floor, including tops of joists before boards are laid; and	
(d) 75 mm in thickness mineral wool cut to fit tightly between joists and laid on 10 mm in thickness plasterboard fixed to underside of joists	45

DUCTS OR OTHER CONSTRUCTION SEPARATING
SOIL AND WASTE PIPES FROM SOLE-
OCCUPANCY UNITS

Masonry not less than 90 mm in thickness with all joints, including those between the masonry and any adjoining construction, filled solid

2 layers of 10 mm in thickness standard plasterboard -

- (a) fixed to timber studs not less than 75 mm x 50 mm spaced at not more than 407 mm centres;
- (b) with the joints in the 2 layers of plasterboard staggered; and
- (c) with all joints in the plasterboard, including those between the plasterboard and adjoining construction, if any, filled solid

30

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52.8 APPROVAL OF CERTAIN CONSTRUCTIONS

Where a form of construction that does not comply with regulation 52.2 or 52.7 is to be used in a building, the construction shall not be so used unless it is approved after the Building Controller considers a report -

- (a) in accordance with regulation 10.3(2); or
- (b) from the Mechanical Engineering Department, University of Adelaide, in a form specified in regulation 10.3(2),

on the construction.

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PART 53 - SPECIAL REQUIREMENTS FOR CERTAIN BUILDINGS AND COMPONENTS

53.1 SWIMMING POOLS

The Building Controller may impose conditions -

- (a) on the disposal of waste from; and
- (b) for the drainage of,
a swimming pool.

53.2 REFRIGERATED AND COOLING CHAMBERS

Safety devices

(1) A building which has a refrigerated or cooling chamber which is of sufficient size to permit the entry of a person shall be provided with -

- (a) a door which can be opened at all times from the inside of the chamber without a key; and
- (b) an approved alarm device situated outside, but controllable only from within, the chamber.

Door width

(2) The door referred to in sub-regulation (1)(a) shall be set in an opening which has a clear width of not less than 600 mm.

53.3 STRONG ROOMS

A strong room in a building shall have -

- (a) internal lighting controllable only from within the room;
- (b) a pilot light situated outside the room but controllable only by the switch for the internal lighting referred to in paragraph (a); and
- (c) an approved alarm device situated outside, but controllable only from within, the room.

53.4 GLAZING MATERIALS

Glass installation in buildings

(1) Glass used in a building shall be selected and installed in accordance with AS 1288 Parts 1 to 3.

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Standards for safety glazing

(2) Where safety glass is required to be installed in a building, it shall comply with AS 2208.

Use of safety glazing materials in doors and certain panels

(3) Subject to sub-regulation (5), in addition to the requirements of this regulation, glazing materials which comply with AS 2208 in relation to Grade A safety glazing materials shall be used in a class of building specified in column 1 of Table 53.4(3) in the situations specified in column 2 of the table opposite the class of building so specified.

Standards for plastic glazing materials

(4) Where plastic glazing materials are used in a building in a situation where AS 1288 Parts 1 to 3 and Table 53.4(3) would require safety glass, the plastic glazing materials shall comply with AS 2208.

Exemptions

(5) Subject to sub-regulations (1), (2) and (4), sub-regulation (3) shall not apply to or in relation to -

- (a) a part of glazing which is in a panel or door and has a surface area of not more than -
 - (i) 0.1 m²; or
 - (ii) 0.5 m² where it is not less than 5 mm in thickness; or
- (b) glazing in a panel or door which encloses or partly encloses a bath or shower.

TABLE 53.4(3)

Column 1	Column 2
Class of building	Situation
I, II, III, IV, V, VI, VII, VIII and IX	(1) Each glazed door (2) Each glazed panel so situated in relation to other parts of the building that it is capable of being mistaken for a doorway or unimpeded path of travel

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TABLE 53.4(3) - continued

Column 1	Column 2
Class of building	Situation
I, II, III, and IV	Each panel of glazing material, whether or not it is so situated in relation to other parts of the building that it is capable of being mistaken for an unimpeded path of travel, situated on the boundary of a room and which has - (a) a vertical edge within 300 mm of the nearest vertical edge of a doorway, and has its lower edge less than 1.2 m in height above the highest floor level or ground level adjoining the glazing; or (b) its lower edge less than 500 mm in height above an adjoining floor level or walking level, and is not less than 2 m² in surface area

53.5 CLEANING OF WINDOWS

Application

(1) A reference in this regulation to a window is a reference to a window in a Class II, III, IV, V, VI, VII, VIII or IX building.

Construction of window for cleaning purposes

(2) Subject to sub-regulation (3), a window in a building shall be constructed so that the exterior face of the window can be cleaned entirely from the interior of the building without any part of a window cleaner's body, except one arm, being required, for the purposes of such cleaning, to project beyond the frame in which the window is set.

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Exemptions

(3) This regulation does not apply to or in relation to a window -

(a) situated in the wall of the first or second storey of a building where the lowest part of the frame of the window is not more than 3.6 m in height above the ground, or in relation to which there is an adjoining flat roof capable of sustaining the weight of a window cleaner and his equipment;

(b) which opens onto -

(i) a balcony which has a rail not less in height than the height which would be required under regulation 53.7(2)(a) for it if it were a protective balustrade or guard;

(ii) a fire escape; or

(iii) a roof which -

(A) has a pitch of not more than 1 in 12;

(B) is not less than 1.8 m in width; and

(C) is capable of sustaining the weight of a window cleaner and his equipment; or

(c) in relation to which provision is made for cleaning its exterior face in accordance with a method (including a system of scaffolding), if any, under the *Construction Safety Act* for the cleaning of a window.

53.6 KIOSKS

A kiosk shall be not less than -

(a) 2.1 m in height between its floor and its ceiling;

(b) 1 m in width; and

(c) 1.5 m² in floor area.

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53.7 PROTECTIVE BALUSTRADES AND GUARDS

Where required

(1) A protective balustrade or guard shall be constructed along the side of -

(a) a roof of a building which is accessible to -

(i) the occupants of the building; or

(ii) members of the public;

(b) each level of an open-deck parking station; and

(c) a stairway, corridor, landing, balcony, verandah, bridge or the like attached or appurtenant to, or contained within, a building where the side is -

(i) not bounded by a wall; and

(ii) more than 915 mm in height or, in the case of a stairway, more than 5 risers above the finished level of the adjoining floor or ground,

of the building.

Dimensions of protective balustrade and guard

(2) Subject to sub-regulation (3), a protective balustrade or guard referred to in sub-regulation (1) shall -

(a) be not less than -

(i) in the case of a stairway - 865 mm in height measured along the nosings of the stair treads of the stairway; and

(ii) in any other case - 1.05 m in height above the floor level; and

(b) where the protective balustrade or guard has an opening - have not less than one of the dimensions of the opening not more than 150 mm.

Exemption

(3) The Building Controller may exempt a protective balustrade or guard referred to in sub-regulation (1) from the requirements of sub-regulation (2) where he is of the opinion that the use to which the protective balustrade or guard is put warrants the exemption.

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53.8 STAIRWAYS IN CLASS I BUILDINGS

Application

(1) A reference in this regulation to a stairway is a reference to a stairway which is the sole means of public access to a Class I building.

Landings between flights

(2) A stairway shall not have more than 18 risers in a flight of stairs before a landing is provided both the length and width of which is not less than the width of the stairway.

Treads and risers of stairway

(3) A stairway shall have -

- (a) the going and riser height of each flight of stairs constant throughout the flight;
- (b) each of its risers not less than 150 mm in height and not more than 190 mm in height;
- (c) each of its treads, excluding nosings, not less than 240 mm in width and not more than 305 mm in width; and
- (d) the product of the rise and the tread not less than 45 m and not more than 48 m.

Curved stairways, &c.

(4) Where a curved, spiral or like stairway is -

- (a) not more than 1 m in width - measurements for the purposes of sub-regulation (3)(b) and (c) shall be taken along the centreline of the stairway;
- (b) more than 1 m in width - the treads and risers of the stairway shall comply with regulation 24.20 as to the shape and size of treads and risers.

53.9 LADDERS

Ladders and fixed step and rung type ladders in a building shall comply with section 5 of AS 1657.

53.10 MODIFIED CAR PARKING FACILITIES FOR THE HANDICAPPED

Wheelchair users

(1) Where a means of access is required in accordance with regulation 24.47 to a building, the building shall be provided with modified car parking facilities -

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- (a) in accordance with this regulation; and
- (b) for the sole use of wheelchair users.

Number of modified car parking spaces required

(2) For each 100 or part of 100 car parking facilities required to be provided in a building referred to in sub-regulation (1), a modified car parking facility shall be provided which -

- (a) is not less than 5.5 m in length and 3.8 m in width; and
- (b) has an even, hard, non-slip surface.

Access for wheelchair users

- (3) Access for use by wheelchair users shall be -
 - (a) provided between a modified car parking facility and an adjoining pathway or building; and
 - (b) level or comply with the requirements which relate to walkways or ramps.

Width of pathway on same level as modified car parking facility

(4) Where a modified car parking facility is parallel to and contiguous with a pathway on the same level as the surface of the modified car parking facility, the width of the pathway shall be so that, where a vehicle is parked in the modified car parking facility, the vehicle does not obstruct passage along the pathway.

Situation of means of access

(5) A modified car parking facility shall be situated as near as practicable to the means of access required under regulation 24.47 to which the modified car parking facility relates.

53.11 SEATING IN CLASS IXb BUILDINGS FOR HANDICAPPED

Number of open spaces

(1) Where fixed seating is provided in a Class IXb building, one open space in accordance with sub-regulation (2) shall be provided for each 250 or part of 250 fixed seats for the first 1,000 fixed seats in the building and one additional open space for each 500 fixed seats or part of 500 fixed seats in addition to those first 1,000 fixed seats.

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Size of open space

(2) An open space required under sub-regulation (1) shall be -

- (a) not less than 900 mm in width and 1.4 m in depth;
- (b) accessible in accordance with regulation 24.47;
- (c) as near as practicable to the entrance to the area in which fixed seating is provided; and
- (d) situated so that it is alongside a fixed seat.

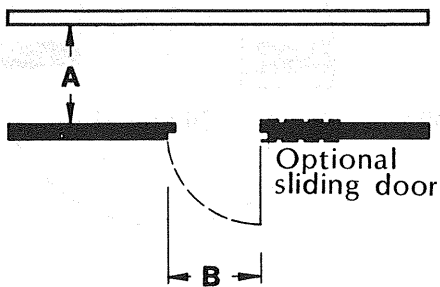
53.12 DOORS IN PATH OF TRAVEL OF THE HANDICAPPED

Where a door is fitted for the purposes of regulation 24.47 to an entrance or circulation space within a Class III, V, VI, VII, VIII or IX building, the door shall -

- (a) have locking and opening controls, other than handles, readily accessible and not more than 1.2 m in height above the floor surface;
- (b) be openable with one hand;
- (c) have a handle not less than 900 mm in height and not more than 1.2 m in height above the floor surface;
- (d) have its door handle aligned horizontally;
- (e) where it is a hinged door, have a handle of a lever type, the end of which lever returns towards the door hinges;
- (f) where it is fitted with a door closer - be capable of being opened by a force of not more than -
 - (i) in the case of an external door - 36N; and
 - (ii) in the case of an internal door - 22N;
- (g) not have a lock which requires simultaneous use of more than one hand; and
- (h) where a wheelchair user is required to turn at right angles to gain access to a room which leads off a corridor, passageway, lobby or the like, have a circulation space in accordance with Figure 53.12.

FIGURE 53.12

DOORWAYS AND TURNING SPACES IN CORRIDORS

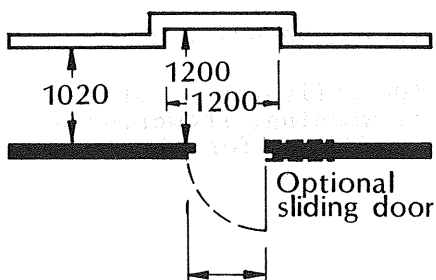


DIMENSIONS

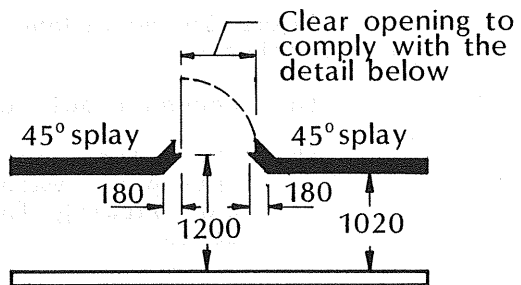
Where dimension "A" is	Dimension "B" shall be a minimum of
1020 mm to 1199 mm	860 mm
1200 mm or more	760 mm

Clear opening to be determined in accordance with the detail below

OR



OR



Clear opening to comply with the detail below

OR

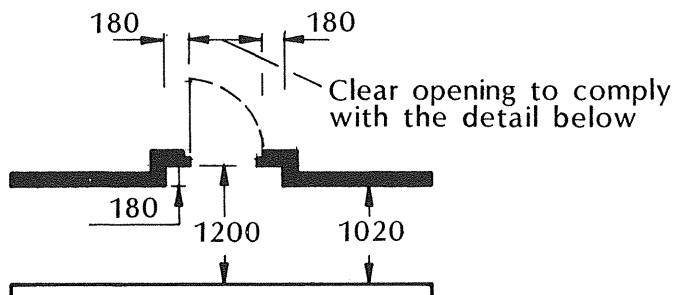
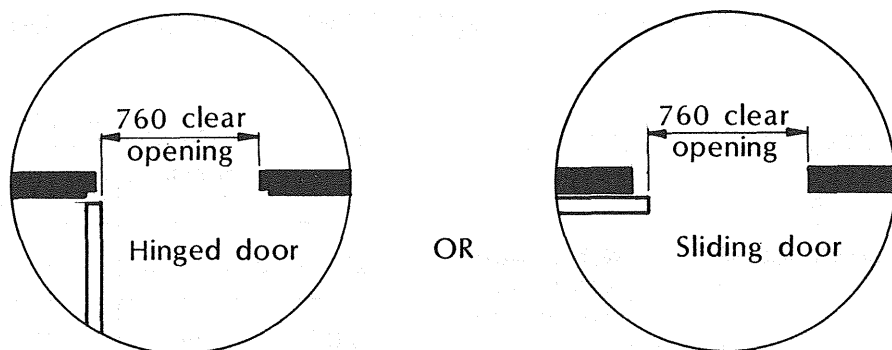


FIGURE 53.12 - continued



DIMENSIONS ARE IN MILLIMETRES AND ARE A MINIMUM

53.13 SIGNS FOR ACCESS FOR THE HANDICAPPED

Signs in accordance with AS 1428 shall be provided to identify -

- (a) access required by regulation 24.47; and
- (b) the location and identification of all entrances, water closets, washing, showering and car parking facilities modified for wheelchair users.

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PART 54 - AWNINGS AND OTHER ATTACHMENTS

54.1 AWNINGS

Definitions

(1) In this Part, unless the contrary intention appears -

"attachment", in relation to a building, includes a clock, cornice, trade sign, lantern, aerial, antenna, flagpole, mechanical or service pipe, equipment and the like which is attached to the building;

"awning" means a roof-like covering designed, constructed or adapted to provide -

- (a) protection from the weather to persons passing under the covering; or
- (b) temperature control within the building to which it is attached;

"carport" means a building designed, constructed or adapted as a motor vehicle shelter and which -

- (a) has no doors; and
- (b) is open on not less than 2 of its sides;

"public place" means a place open to, or used by, the public.

Awnings and attachments to buildings to comply with Part 30

(2) An awning and an attachment shall comply with the requirements of Part 30 applicable to it.

54.2 AWNINGS AND VERANDAHS

An awning or verandah shall not be constructed -

- (a) as part of a building; and
- (b) over a public place,

unless -

- (c) structural calculations for the awning or verandah, as the case may be, and its attachment to the building are submitted to the Building Controller and approved; and

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- (d) it complies with the fire-safety and fire-resisting requirements to which the building is subject.

54.3 AWNINGS AND CARPORTS

Permanent awnings

(1) A permanent awning constructed over a public place shall be -

- (a) cantilevered or otherwise entirely supported from the building or buildings to which it is attached;
- (b) provided with a continuous lining or soffit and constructed of non-combustible materials other than the battens of timber, if any, used for fixed linings;
- (c) where the public place is provided with a kerb - set back not less than 450 mm from the line of the kerb on a vertical plane;
- (d) not less than 3 m in height above the level of the highest part of the surface of the public place; and
- (e) provided with a roof impervious to water, drained in such a manner that water will not fall on the public place.

Moveable awnings

- (2) A moveable awning or sunblind shall not be -
 - (a) constructed as part of a building;
 - (b) attached to a building; or
 - (c) attached to a fixed awning of a building; and
 - (d) over a public place,

unless -

- (e) the awning or sunblind, where fully lowered, is not less than 2.3 m in height above the level of the highest part of the surface of the public place;
- (f) no part of the awning or sunblind projects more than 2 m in horizontal length from the building;

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- (g) no part of the awning or sunblind encroaches on the carriageway of a street; and
- (h) steel or iron work, if any, in the awning or sunblind is protected against corrosion.

Carports

- (3) A carport shall not be constructed unless -
 - (a) no part of the carport encroaches upon a public place; and
 - (b) where it is attached to a building - it complies with the fire safety and fire-resisting requirements to which the building is subject.

54.4 CERTAIN ATTACHMENTS

General requirements

- (1) A person shall not construct an attachment to a building unless the requirements of this regulation in relation to the attaching of the attachment are complied with.

Steel to be protected

- (2) The steel or iron work of an attachment to a building which is an aerial, antenna, flagpole, mast tower or the like shall be protected against corrosion.

Height above public place

- (3) Where an attachment to a building is over a public place, it shall be not less than 2.3 m in height above the public place.

Drainage from mechanical equipment

- (4) Where an attachment to a building is mechanical equipment, it shall not be constructed over a public place unless drainage from the equipment is satisfactory to the Building Controller.

Protection from lightning

- (5) The Building Controller may request the Commission within the meaning of the *Electricity Commission Act* to provide a report on the need for lightning protection for an attachment to a building and, where the Commission receives such a request, it shall supply the report the subject of the request.

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Structural calculations required

(6) Structural calculations for an attachment to a building and its method of attachment shall be submitted to the Building Controller by the owner of the building, or a person authorized in that behalf by the owner, and the Building Controller shall not approve the attaching of the attachment to the building unless he is satisfied that, in view of those structural calculations -

- (a) the attachment complies with the requirements of this Part applicable to it; and
- (b) the attaching of the attachment will ensure that the attachment is securely fixed to the building.

Certain structures exempted

(7) This Part does not apply to or in relation to an attachment which is an aerial, antenna, flagpole, mast tower or the like which is attached to a building and which is not more than 2.5 m in height above the part of the building to which it is attached.

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PART 55 - GENERAL SERVICES AND EQUIPMENT

55.1 BUILDINGS NOT CONNECTED TO PUBLIC SEWERAGE SERVICE

Where a building is not connected to a public sewerage service, the fixtures, appliances, pipes and fittings for the disposal of sewage and sullage from the building, and their installation, shall be as approved.

55.2 OPENINGS IN FIRE-RESISTING CONSTRUCTION

Wires and cables

(1) Wires or cables, for electrical, telephone or other services, that -

- (a) are not enclosed in metal pipes, metal conduits or other non-combustible materials; and
- (b) pass through a wall, floor or ceiling required to have a fire-resistance rating,

shall comply with sub-regulations (2) and (3).

Packing of holes

(2) The space between a wire or cable referred to in sub-regulation (1) and the inside faces of the holes in the walls, floors or ceilings through which it passes, including the inside faces of sleeves or the like that may be inserted to carry it, shall be packed solid with an approved non-combustible material.

Area of holes limited

(3) The total area of a hole for the accommodation of a wire or cable referred to in sub-regulation (1) in a 10 m² part of a floor or ceiling required to have a fire-resistance rating shall be not more than 7 x 10³ mm².

55.3 AIR-HANDLING SYSTEMS

Installation

(1) The installation of a system of mechanical ventilation or air-conditioning shall comply with AS 1668 Parts 1 and 2.

Certificates of engineers and others

(2) Where a system of mechanical ventilation or air conditioning is to be installed in a building and the Building Controller is not satisfied that the whole or a part of the system will meet the requirements of this Code applicable to it, he may require the submission to him of a certificate -

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(a) from an approved -

(i) practising mechanical engineer; or

(ii) person,

certifying that, when completed, the installation will meet those requirements; and

(b) setting forth in detail the basis on which it is given and the extent to which the engineer or person has relied on relevant specifications, rules, codes of practice or publications in relation to the installation.

55.4 EXCLUSION OF SMOKE FROM FIRE-ISOLATED STAIRWAYS, FIRE-ISOLATED RAMPS AND FIRE-ISOLATED PASSAGEWAYS

Buildings which have rise of more than 6 storeys

(1) A fire-isolated stairway, fire-isolated ramp or fire-isolated passageway which serves a building which has a rise of more than 6 storeys shall be protected in accordance with sub-regulation (3) or (4) from the entry of smoke.

Serving below ground storeys

(2) A fire-isolated stairway, fire-isolated ramp or fire-isolated passageway that serves 3 or more storeys in a building from which egress would involve a vertical rise within the building of more than 1.5 m shall be protected in accordance with sub-regulation (3) from the entry of smoke.

Pressurization

(3) Subject to sub-regulation (4), for the purposes of sub-regulations (1) and (2), a fire-isolated stairway, fire-isolated ramp or fire-isolated passageway in a building shall be positively pressurized by means of a pressurizing system -

(a) designed to operate in accordance with AS 1668 Part 1 in the event of a fire on a storey of the building; and

(b) which does not serve any part of the building other than the fire-isolated stairway, fire-isolated ramp or fire-isolated passageway.

Balcony access

(4) Subject to sub-regulation (2), instead of the pressurizing system referred to in sub-regulation (3), each means of access from within a building, which has a

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rise of more than 6 storeys, to a fire-isolated stairway, fire-isolated ramp or fire-isolated passageway may be by way of an open access ramp or balcony which -

- (a) has a clear ventilation opening to the outside air, which opening -
 - (i) has an area not less than the floor area of the ramp or balcony; and
 - (ii) is evenly distributed along the open sides of the ramp or balcony; and
- (b) is not enclosed on its open sides above 1.07 m in height except by an open grille or the like which has a free air space of not less than 75% of its area.

55.5 BUILDINGS WITH FLOORS MORE THAN 21 m IN HEIGHT ABOVE STREET, &c., TO HAVE EMERGENCY LIFT

Where required

(1) Where the floor of the topmost storey of a building, excluding a storey which contains only heating, ventilating, lift or other equipment, water tanks or like service units, is more than 21 m in height above the floor of the lowest storey of the building which provides egress to a street or open space, the building shall have not less than one lift capable of becoming an emergency lift to serve all floors served by the lifts in the building.

Definition of "emergency lift"

(2) For the purposes of this Part, "emergency lift" means a lift which has its operating controls so installed that it may be removed from normal automatic operation by means of a keyed switch situated in -

- (a) the lift lobby of the main entrance storey of the building; or
- (b) an approved place.

Fire-resistance rating of emergency lift

(3) An emergency lift in a building shall be isolated from other lifts in the building by construction which has a fire-resistance rating of not less than that required for the part of the building in which the lift is situated.

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Electrical requirements

(4) A lift capable of being used as an emergency lift in a building shall have its electrical service connected to the supply side of the main disconnection switch for the building, such electrical service to consist of copper-sheathed mineral-insulated cable.

Standby power system for emergency lift

(5) An emergency lift shall, upon failure of its normal power supply, be supplied by an approved standby power supply system which will automatically energize the lift not more than 30 seconds after the failure of the normal power supply.

Operation of controls

(6) An emergency lift shall be designed so that, upon the operation of the keyed switch referred to in sub-regulation (2) -

- (a) the lift returns to the floor of the storey in which the keyed switch is situated and the doors open and, where the lift must stop and reverse in order to return to the storey, the doors at the reversal floor do not open;
- (b) all light beam or electronic door protective devices on the lift are de-activated but the protection from door edge re-opening devices is retained;
- (c) the lift responds only to the controls within the lift car;
- (d) the lift doors do not open at a floor other than the floor of the storey in which the keyed switch is situated unless the "Open Door" button is pressed and, where so opened, the doors remain open until the "Close Door" button is pressed; and
- (e) all other lifts in the building return to the floor of the storey in which the keyed switch is situated.

55.6 VENTILATION OF LIFT SHAFTS

Minimum area

(1) The top of a lift shaft shall be ventilated to the outside air by an unobstructed opening which has an aggregate area of not less than 10% of the cross-sectional area of the shaft.

Exhaust ventilation

(2) An unobstructed opening referred to in sub-regulation (1) shall be so arranged as to induce exhaust ventilation of the shaft for which it is provided.

55.7 WARNING AGAINST USE OF LIFTS IN FIRE

Signs to be displayed

(1) Subject to sub-regulation (3), a warning sign which complies with the details and dimensions of Figure 55.7(1) shall be displayed in a conspicuous position near each call button for a lift or group of lifts throughout a building.

Details of warning sign

(2) A warning sign referred to in sub-regulation (1) shall consist of -

- (a) incised, inlaid or embossed letters on a metal, wood, plastic or like plate securely and permanently attached to a wall; or
- (b) letters incised or inlaid directly into the surface of the material which forms a wall.

Exception for certain small lifts

(3) Sub-regulation (1) does not require the display of a warning sign referred to in that sub-regulation for a small lift, including a dumb-waiter or the like, intended for the transport of goods only.

FIGURE 55.7(1)

 1.5 mm minimum

**IN CASE OF FIRE
DO NOT USE LIFTS**

 8 mm minimum

Capital or lower case letters
in legible style.
Colour of letters contrasting
with background.

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55.8 EMERGENCY LIGHTING

Location

(1) A system of emergency lighting which complies with this Part shall -

(a) in a Class II or III building, be installed in each -

(i) fire-isolated stairway, fire-isolated ramp or fire-isolated passageway; and

(ii) corridor, hallway or the like which is more than 5.5 m in length measured from the entrance doorway of a sole-occupancy unit to the nearest doorway which opens directly -

(A) into a fire-isolated stairway, fire-isolated ramp or fire-isolated passageway;

(B) to an external stairway which serves, in accordance with regulation 24.5, as a fire-isolated stairway;

(C) onto an external access balcony which leads to a fire-isolated stairway, fire-isolated ramp or fire-isolated passageway; or

(D) onto a street or open space;

(b) in a Class V, VI, VII or VIII building, be installed in each -

(i) fire-isolated stairway, fire-isolated ramp or fire-isolated passageway; and

(ii) corridor, hallway or path of travel within the building which is more than 5.5 m in length measured from the entrance doorway of a Class IV building, if any, situated in the building to the nearest doorway which opens directly -

(A) into a fire-isolated stairway, fire-isolated ramp or fire-isolated passageway;

(B) to an external stairway which serves, in accordance with regulation 24.5, as a fire-isolated stairway;

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- (C) onto an external access balcony which leads to a fire-isolated stairway, fire-isolated ramp or fire-isolated passageway; or
 - (D) onto a street or open space;
- (c) in a storey in a Class VI building, be installed in the storey where -
- (i) the floor area in the storey, calculated in accordance with regulation 24.23, is more than 300 m²;
 - (ii) a point on the floor of the storey is more than 18 m from the nearest doorway which opens directly into or onto a stairway, ramp, passageway, street or open space;
 - (iii) egress from the storey involves a vertical rise -
 - (A) within the building of more than 1.5 m in height; or
 - (B) and the storey is not, in the opinion of the Building Controller, equipped with sufficient means of admitting light; or
 - (iv) the storey provides a path of travel from any other storey required by sub-paragraphs (i), (ii) and (iii) to have emergency lighting; and
- (d) be installed in a fire-control room.

Special locations

(2) The Building Controller may require the installation of emergency lighting in a storey of a building referred to in sub-regulation (1) where he is of the opinion that illumination sufficient for safe egress from the storey will not be available in the event of an emergency.

Measurement of distance

(3) The distances required under this regulation, other than vertical rise referred to in sub-regulation (1), shall be the shortest measurement along the corridor or other path of travel, whether by straight lines, curves or a combination of straight lines and curves.

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Type and position

- (4) Where emergency lights are required -
 - (a) in a stairway, each such light shall -
 - (i) have a luminous flux of not less than that provided by a 25 W incandescent lamp or a 6 W fluorescent tube; and
 - (ii) be mounted in an approved position in the vicinity of each landing of the stairway at not less than 1.8 m in height above the landing; and
 - (b) in a part of a building other than a part which contains a stairway, each such light shall -
 - (i) have a luminous flux of not less than that provided by a 25 W incandescent lamp or a 6 W fluorescent tube; and
 - (ii) be situated so that no point on a floor, including a corridor, passageway or the like, is more than 12 m from a lamp, measured in a horizontal straight line.

Power source

- (5) The power source of required emergency lighting shall -
 - (a) consist of -
 - (i) batteries with approved charging equipment arranged so that the batteries are kept fully charged; or
 - (ii) an approved standby power system, the batteries of which, if any, shall comply with the charging arrangements referred to in sub-paragraph (i);
 - (b) be capable, in accordance with sub-regulations (1), (2) and (4), of energizing lighting for not less than 1½ hours;
 - (c) automatically energize the emergency lighting upon failure of the normal lighting to the area for which the emergency lighting is provided, with a delay of not more than 1 second before the system is energized and a delay of not more than 5 seconds before 40% of normal light output of lamps is attained after energization; and
 - (d) other than where it is -
 - (i) in a building of Type 4 or 5 construction;

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- (ii) situated outside the external walls of a building; or
- (iii) intended to supply a single light only, be contained in a separate enclosure which has a fire-resistance rating of not less than 1 hour.

Wiring

(6) Where a power source of emergency lighting supplies more than one emergency light -

- (a) wiring shall be -
 - (i) copper-covered mineral-insulated cable with copper conductors; or
 - (ii) protected by being -
 - (A) completely surrounded by not less than 25 mm in thickness of concrete or masonry; or
 - (B) covered by not less than 25 mm in thickness of gypsum plaster or cement render on metal lath; and
- (b) the power source shall be arranged so that emergency lights which serve any 2 contiguous square areas of floor each of which is not more than 324 m² in area -
 - (i) are on separate circuits; and
 - (ii) upon the failure of a circuit referred to in sub-paragraph (i), no point on a floor is more than 30 m from an active emergency light.

55.9 EXIT SIGNS

An exit sign required by regulation 24.24 shall be installed in accordance with AS 2293 Part 1.

55.10 LIFT INSTALLATIONS

Australian Standard

(1) A lift in a building shall be installed in accordance with AS 1735 and this regulation.

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Handrails in lift cars

(2) A handrail not less than 600 mm in length and not less than 900 mm in height and not more than 1 m in height above the floor surface shall be fixed adjacent to the control panels in a lift car.

Dimensions of lift car

(3) A lift car shall -

- (a) where the lift lobby has floor dimensions of 1.8 m x 1.8 m or more - have internal floor dimensions of not less than 1.3 m in depth by 1.2 m in width; and
- (b) where the lift lobby has floor dimensions of less than 1.8 m x 1.8 m - have internal floor dimensions of not less than 1.8 m in depth by 1.8 m in width.

Lift doors

(4) The door of a lift car shall -

- (a) be power-operated; and
- (b) have a clear opening access of not less than 810 mm in width to the lift car.

Call buttons

(4) Lift landing call buttons and other control buttons in lift lobbies and in lift cars shall be situated not less than 900 mm in height and not more than 1.6 m in height above the floor level.

Position of alarm systems

(5) A lift alarm button or emergency telephone in a lift car shall be not more than 1.3 m in height above the floor level.

55.11 COMMUNICATION SYSTEM

A communication system required by regulation 27.8 in a building shall -

- (a) connect each waiting area in the building with a master control panel situated at -
 - (i) the fire control point in the building; or
 - (ii) an approved position;

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- (b) comply with AS 2220;
- (c) have indicator lights on the master control panel which -
 - (i) illuminate when a phone handset at a waiting area is uplifted; and
 - (ii) identify the waiting area at which the phone handset is so uplifted; and
- (d) have a phone handset situated so as to be accessible to a wheelchair user.

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PART 56 - REPAIR, ALTERATION AND RESTORATION

No provisions.

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PART 57 - RUINOUS AND DANGEROUS BUILDINGS

57.1 RUINOUS OR DANGEROUS BUILDING

Where the Building Controller is of the opinion that a building is in a ruinous state or is dangerous to the public, he may direct that inspections and tests be carried out to ascertain the condition of -

- (a) the footings;
- (b) the walls;
- (c) the floors;
- (d) the roofs; or
- (e) other structural members which are an integral part,

of the building.

57.2 BUILDINGS UNFIT FOR HUMAN HABITATION

Where the Building Controller is of the opinion that a building is unfit or unsuitable for human habitation, he may require inspections and tests be carried out on -

- (a) the structural members referred to in regulation 57.1;
- (b) the drainage and sanitary conveniences;
- (c) the dampness;
- (d) the natural lighting;
- (e) the ventilation; or
- (f) the facilities for the preparation and cooking of food and for the disposal of waste water,

of or in the building.

57.3 NOTICE TO DEMOLISH, &c., BUILDING

Where the inspections and tests referred to in regulation 57.1 or 57.2 of a building referred to in that regulation show that the building is -

- (a) in a ruinous state or is dangerous to the public; or
- (b) unfit or unsuitable for human habitation,

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the Building Controller shall serve notice on the owner of the building requiring him to demolish and remove, or alter, modify and repair, the building, or part of the building, as specified in the notice, within the period specified in the notice, in accordance with this Code, and the owner the subject of the notice shall, accordingly, comply with the notice.

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PART 58 - TEMPORARY AND SPECIAL STRUCTURES

58.1 TEMPORARY STRUCTURES, &c.

Definition of "temporary or special structure"

(1) For the purposes of this Code, a temporary or special structure does not include a building constructed by way of alteration, addition or extension to an existing building.

Approval of construction of temporary or special structure

(2) A temporary or special structure shall not be constructed unless approved, which approval shall, without limiting the generality of the conditions to which the approval may be subject, have a condition which specifies the period within which the structure shall be removed or demolished.

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PART 59 - MAINTENANCE OF FIRE AND OTHER SAFETY MEASURES

59.1 APPLICATION

Buildings concerned

(1) Subject to sub-regulation (2), this Part applies to and in relation to all buildings.

Date of application

(2) This Part does not apply to or in relation to a building except on and from the date of issue of the certificate of occupancy in relation to the building.

59.2 MAINTAINED ITEMS

Owner of building responsible for maintenance, &c.

(1) The owner of a building shall be responsible for -

- (a) the inspection, testing and maintenance in good working order of the maintained items specified in column 1 of Table 59.2(1) in accordance with the requirements of the table; and
- (b) the maintenance and up-keep of log-books, giving a true, complete and faithful account of inspections and tests made, and maintenance of, the required maintained items,

in the building.

Inspection, testing and maintenance of maintained items to be by competent person

(2) A person who is, in the opinion of the Building Controller, competent in the relevant area shall carry out the inspection, testing and maintenance, referred to in sub-regulation (1), in relation to -

- (a) automatic fire doors, fire windows and fire shutters;
- (b) a fire main or hydrant;
- (c) a lift;
- (d) an emergency lighting installation;
- (e) an automatic sprinkler installation;
- (f) an air-handling system or part of an air-handling system that is subject to regulation 55.3 or 55.4; and
- (g) an automatic fire alarm installation.

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Interpretation

- (3) For the purposes of this regulation -
- (a) where the term "fire wall" is used in AS 2118 it shall be interpreted as having the meaning ascribed to a wall which has a fire-resistance rating of not less than 2 hours; and
- (b) where the frequency of an inspection or test is nominated in Table 59.2(1), whether in the table or in an Australian Standard to which the table refers, the period nominated shall be construed as meaning -
- (i) annually or yearly - a period of not more than 52 weeks for each year;
- (ii) quarterly - a period of not more than 3 calendar months;
- (iii) monthly - a period of not more than one calendar month;
- (iv) fortnightly - a period of not more than 14 days; and
- (v) weekly - a period of not more than 7 days.

TABLE 59.2(1)

SCHEDULE OF MAINTAINED ITEMS

Column 1	Column 2	Column 3
Item to be inspected or tested	Nature of inspection or test	Frequency of inspection or test
1. <i>Opening Protection</i>		
A fire door, fire window and fire shutter where any such element is required to be installed in the particular opening	Operate and inspect for compliance with Parts 21 and 22	Quarterly

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TABLE 59.2(1) - continued

Column 1	Column 2	Column 3
Item to be inspected or tested	Nature of inspection or test	Frequency of inspection or test
2. Egress		
(a) Exits and paths of travel, including doors, doorways and exit signs	Inspect to ensure compliance with regulations 24.14, 24.24, 24.34, 24.41, 24.42, 24.43, as the case may be	Monthly
(b) Required handrails	Inspect for compliance with the requirements of regulation 24.22	Annually
(c) Arrangements for safe egress in buildings with security provisions	Inspect to ensure compliance with requirements of regulation 59.2	Monthly
3. Signs		
(a) Signs concerning use of lifts in the event of fire	Inspect for legibility and installation in compliance with Part 55	Annually
(b) Exit signs illumination -	Check that the lamp fitted matches the approved lamp rating marked on the sign fitting and in the log-book	Monthly
(i) Internally illuminated signs		
(ii) Externally illuminated signs	Check that the illumination is not less than 50 lx and the variation in illuminance over the face of the sign is not more than 3:1	Monthly
4. Emergency Lighting		
Required emergency lighting	(a) Operate in conditions of simulated failure of power to the distribution board concerned and check for compliance with regulations 55.8 and 55.9;	Monthly

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TABLE 59.2(1) - continued

Column 1	Column 2	Column 3
Item to be inspected or tested	Nature of inspection or test	Frequency of inspection or test
	(b) where batteries are involved, test and inspect as specified in AS 1670 as though the batteries were installed pursuant to the provisions of that Australian Standard or, where that Australian Standard is not appropriate, test or inspect as required by the Director; and	As specified in that Australian Standard
	(c) check battery charger for correct operation	Monthly
5. <i>Fire-fighting Services and Appliances</i>		
(a) Required fire mains with associated valves, pumps, storages, booster connections and the like;	As specified in AS 1851 Part 3 as though the maintained item were required by that Australian Standard as a wet-pipe system	As specified in that Australian Standard
(b) Required portable fire extinguishers and required fire-hose reels;	Required portable fire extinguishers as specified in AS 1851 Part 1	As specified in that Australian Standard
	Required fire-hose reels as specified in AS 1851 Part 2	As specified in that Australian Standard
(c) Required hydrants	As specified in AS 1851 Part 3 as though they were required by that Australian Standard, to the extent that the provisions of that rule can be applied	As specified in that Australian Standard

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TABLE 59.2(1) - continued

Column 1	Column 2	Column 3
Item to be inspected or tested	Nature of inspection or test	Frequency of inspection or test
6. <i>Sprinklers -</i>		
(a) required sprinkler installations	As specified in AS 1851 Part 3	As specified in that Australian Standard
(b) plans of risk and emergency instructions	Inspect for presence and leg- ibility to comply with the provisions of rule 8.3, 8.4 and 8.5 of AS 2118	As specified in that Australian Standard
7. <i>Air-handling Systems</i>		
(a) fans associated with the operation of an air-handling system in the required emergency mode	Operate and check for correct operation in accordance with Section 5 of AS 1668 Part 1 and ensure that the system is left in correct operating condition	Quarterly
(b) air-handling shut down facilities	Operate and check for correct operation in accordance with Section 5 of AS 1668 Part 1 and ensure that the system is left in the correct operating condition	Quarterly
(c) detectors and assoc- iated batteries	Test and inspect as though they were specified for installations installed pursuant to AS 1670 and check battery charger for correct operation	Battery quarterly and de- tectors as specified in that Australian Standard
(d) noise levels in occupied parts and stairs during a fire situation	Test during a simulated fire situation in accordance with the method specified in AS 2107	As specified in that Australian Standard

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TABLE 59.2(1) - continued

Column 1	Column 2	Column 3
Item to be inspected or tested	Nature of inspection or test	Frequency of inspection or test
(e) fire situations	Check to ensure compliance with Figures 2.1 to 2.5, rule 4.8 and Section 5 of AS 1668 Part 1	Annually
(f) dampers -		
motorized	Disconnect or bypass the temperature-operated control device and check for correct operation of the motor and damper as required by rule 3.3(b) of AS 1668 Part 1	Quarterly
non-motorised	Check by disconnecting the fusible link and then check the correct closing of the damper	Quarterly
air filters	Check in accordance with rule 3.1 of AS 1668 Part 1 to ensure continued correct operation of air intake	Quarterly
(g) fire-control panels	Test and inspect as though the panel were installed as a fire indicator board pursuant to AS 1670	As specified in that Australian Standard
(h) pressurizing of stairs, ramps and passageways	Operate, test and ensure compliance with rules 7.1 to 7.3 of Section 7 of AS 1668 Part 1; and	Monthly
	For compliance with rule 7.4 of AS 1668 Part 1	Annually
8. Automatic Fire Alarms		
(a) required automatic fire alarms	As specified in rule 2.14 of AS 1670 - as appropriate	As specified in that Australian Standard

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TABLE 59.2(1) - continued

Column 1	Column 2	Column 3
Item to be inspected or tested	Nature of inspection or test	Frequency of inspection or test
(b) Special situations and precautions and outdoor applications	Inspect for compliance with rules 2.4.4, 3.3.7 and 5.5 of AS 1670 - as the case may be	Annually
(c) tubular and pressure wave systems	Inspect for compliance with rule 3.4(b) of AS 1670	Annually
(d) protection of lines of wire with melting elements	Inspect for compliance with rule 3.5(e) of AS 1670	Annually
(e) compartmentation of roofs and ceilings	Ascertain for compliance with rule 4.6 of AS 1670	Annually
(f) loss of power to master alarm- actuating device	Test for (simulated) loss of power and compliance with rule 2.5.8 of AS 1670	Monthly
(g) self-resetting current limiting device for storage batteries	Operate and inspect for proper operation and com- pliance with rule 2.7.2 of AS 1670	Monthly
(h) clearances	Inspect for compliance with rule 2.10.8 of AS 1670	Monthly
9. Lifts		
Lifts and associated equipment for operation in event of emergency	Operate under simulated emergency conditions and check for compliance with regulation 55.5	Quarterly

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TABLE 59.2(1) - continued

Column 1	Column 2	Column 3
Item to be inspected or tested	Nature of inspection or test	Frequency of inspection or test
10. <i>Fire-Resisting Structure</i>		
Compartmentation and fire-resistance of structural members	Ascertain that any work per- formed or any occurrence, accidental or otherwise, has not resulted in any reduction in the fire-resistance rating or other fire-resisting provision of any part of the building installed as required by this Code	Annually

59.3 LOG BOOKS

Requirements

(1) A log-book referred to in regulation 59.2(1)(b)
shall -

- (a) where not in actual use - be kept in an approved
fire-resisting situation and be accessible for
inspection at all reasonable times by the
Director; and
- (b) record for each of the maintained items
specified in Table 59.2(1) -
 - (i) the date of the inspection or test;
 - (ii) the identity of the person making the
inspection or test;
 - (iii) the identity of the maintained item
inspected or tested;
 - (iv) whether the maintained item was in good
working order or not;
 - (v) where the maintained item was not in good
working order - the remedial action, if
any, proposed; and

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- (vi) where a remedial action referred to in sub-paragraph (v) was completed and inspected or tested - the result of the inspection or test.

Log books to be retained

(2) A log-book referred to in regulation 59.2(1)(b) shall -

- (a) be retained, by the owner of the building the subject of the log book, for inspection for a period such that, for a maintained item, the record of the 2 previous inspections on the maintained item is available at any time; and
- (b) contain a permanent record attached to the log-book, which record shall contain extracts from this Code and, where applicable, documents referred to in this Code, being those extracts and documents that refer specifically to the condition, state or function of the maintained items specified in Table 59.2(1).

Remedial action

(3) A remedial action referred to in sub-regulation (1)(b)(v) shall be commenced not later than -

- (a) in the case of a maintained item required to be inspected each week - one week; and
- (b) in any other case - one month,

after it is proposed and shall be completed as soon as practicable.

59.4 EXEMPTIONS

During period of vacancy

(1) The Building Controller may exempt a building or part of a building from the application of all or any of the requirements of this Part applicable to the building or part of the building during a period of vacancy in which the Building Controller is satisfied that -

- (a) no undue hazard will result to -
 - (i) the occupants of a part of the building, if any, not exempted from this Part;
 - (ii) the public;
 - (iii) the building or part of the same building; and

Northern Territory Building Code

- (iv) another building or part of a building situated on the same site; and
- (b) the difficulty of fighting a fire in the building or part of the building will not be unduly increased,

as a result of the exemption.

Notification by Building Controller

(2) The Building Controller shall notify in writing the owner of a building or part of a building -

- (a) upon granting an exemption under sub-regulation (1) in relation to the building or part, in which case the notice shall specify the conditions under which the exemption is granted; and
- (b) upon requiring -
 - (i) any of the conditions, if any, referred to in paragraph (a) to be amended; or
 - (ii) the exemption to be revoked.

Notification by owner

(3) An exemption granted under sub-regulation (1) shall require the owner of the building or part of the building the subject of the exemption to -

- (a) notify the Director of the exemption granted, prior to the exemption becoming effective; and
 - (b) upon notification by the Building Controller of the cancellation of the exemption, bring the building into compliance with the requirements of this Part applicable to it.
-

Northern Territory Building Code

SCHEDULE 1

Regulation 1.4(1)

FORM 1

NORTHERN TERRITORY OF AUSTRALIA

Building Act

Section 40(2), (3) and (6)

CERTIFICATE OF OCCUPANCY

Regulation 1.4(1)

No.....

This is to certify that -

- *(a) in pursuance of section 40(2) of the *Building Act*, the building work in respect of the building situated at
.....
has been completed in accordance with the prescribed requirements and as erected/alterd is fit for occupation as a building of the class/classes* specified below within the terms specified below;
- *(b) in pursuance of section 40(3) of the *Building Act*, the building situated at
.....
as erected/alterd* is fit for occupation as a building of the class/classes* specified below within the terms specified below;
- *(c) in pursuance of section 40(6) of the *Building Act*, that part specified below of the building situated at
.....
is fit for occupation, within the terms specified below, as part of a building of the class/classes* specified in the building approval for the building work in relation to that building.

No. of storeys	Floor	Type of construction	Class/ classes of building	Maximum permissible live load	No. of persons for whom exit space is provided

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The building/part of building* does/does not* comply with the requirements of the Northern Territory Building Code for unit title approval.

Date / /

.....
Building Controller

* Strike out where inapplicable.

-
- Note: The use of a part of the building for a class of building other than the class of building specified in this certificate for that part, or for an occupancy of the same class involving a greater live load, or for the accommodation of a greater number of persons than that specified in this certificate for that part, is an offence against the *Building Act*.
-

Northern Territory Building Code

FORM 2

NORTHERN TERRITORY OF AUSTRALIA

Building Act

Section 28(1)

Northern Territory Building Code

Regulation 8.1(1)

APPLICATION FOR BUILDING APPROVAL

To the Building Controller,
Department of Lands, Building Authority Branch,
P.O. Box 1680,
DARWIN N.T. 5794

I hereby apply for an approval *to construct/ to demolish/
to remove for a stage of building work on
a building on Allotment No.....in.....Street.....

Nature of construction *new building/alteration/addition/
repair.

Owner of Land

Name
Address
.....

Superintending Architect
* and/or Engineer

Name
Address
.....

Builder

Name
Address
.....

Purpose for which building is to be used
.....

Specify class of building

(Class I - House	Class VI - Shop
Class II - Flats	Class VII - Warehouse
Class III - Residential Building	Class VIII - Factory
Class IV - Dwelling attached to	Class IX - Public
building of other class	building
Class V - Office building	Class X - Outbuilding)

Northern Territory Building Code

* If Class II building, is building to be unit
titled No/Yes*

Estimated cost of work

I undertake that the *construction/demolition/removal will
be carried out in conformity with the requirements of the
Northern Territory Building Code.

Dated this day of, 19

Signature

*Owner

Agent of Owner

Fee

Approval No.

Date issued

.....
Building Controller

* Strike out where inapplicable

Note: The information shown on this application is
subject to general publication. Details which you
do not wish to be published should be notified at
the time of submission of the application.

Northern Territory Building Code

SCHEDULE 2

Regulation 1.4(5)

AUSTRALIAN STANDARDS REFERRED TO IN THIS CODE

Code No. and date	Title	Regulation
AS 1155 - 1974 Am 1, 1979	Metric Units for use in the Construction Industry	1.4(2)
AS 1170 - Part 1 - 1981 Part 2 - 1981	SAA Loading Code - Dead and Live Loads - Wind Forces	30.1 1.4(1) (see defi- nition of "tropical cyclone area") and 30.1
AS 1200 - 1981	SAA Boiler Code	25.5 and 25.7
AS 1221 - 1983	Fire Hose Reels	27.1 (see clause 19(1) of specifi- cation No. 27.1) and 27.2(3)
AS 1225 - 1980	Burnt Clay and Shale Building Bricks	28.1 (see Table 28.1)
AS 1226 - 1980	Methods of Sampling and Testing Burnt Clay and Shale Building Bricks	28.1 (see Table 28.1)
AS 1250 - 1981	SAA Steel Structures Code	40.1(2)
AS 1288 - Parts 1 to 3 - 1979	SAA Glass Installation Code	46.8(3), 53.4(1) and (4)
AS 1302 - 1982	Steel Reinforcing Bars for Concrete	33.2(3)
AS 1304 - 1973	Hard-drawn Steel Wire Reinforcing Fabric for Concrete	33.2(3)
AS 1326 - 1972	Polyethylene (Polythene) Film for Packaging and Allied Purposes	47.9
AS 1346 - 1973	Concrete Building Bricks	28.1 (see Table 28.1) and 52.7(1) (see Table 52.7(1))

Northern Territory Building Code

SCHEDULE 2 - continued

Code No. and date	Title	Regulation
AS 1428 - 1977	Design Rules for Access by the Disabled	24.47(1), 46.7(1), 46.8(1) and 53.13
AS 1445 - 1977	76 mm Pitch Corrugated Hot- dipped Zinc-coated or Aluminium/Zinc-coated Steel Sheet	28.1 (see Table 28.1)
AS 1465 - 1974	Dense Natural Aggregates for Concrete	20.9(3) (see clauses 8(3)(a) and 21(2) of Specification No. 20.9(3))
AS 1475 - Part 1 - 1977 Am 1	SAA Blockwork Code - Unreinforced Blockwork	36.3(1)
AS 1480 - 1982	SAA Concrete Structures Code	20.9(1), 28.1 (see Table 28.1), 33.2(2), 35.1(3) and 40.1(2)
AS 1481 - 1978	SAA Prestressed Concrete Code	20.9(2), 28.1 (see Table 28.1) and 40.1(2)
AS 1500 - 1974	Concrete Building Blocks	28.1 (see Table 28.1)
AS 1530 - Part 1 - 1976	Methods for Fire Tests on Building Materials and Structures - Combustibility Test for Materials	1.4(1) (see definitions of "combustible" and "non-combustible")
Part 2 - 1973	- Test for Flammability of Materials	1.4(1) (see definition of "flammability index")
Part 3 - 1982	- Test for Early Fire Hazard Properties of Materials	1.4(1) (see definitions of "smoke-developed index", "spread-of- flame index" and "standard fire test") and 16.17(2)(b)
Part 4 - 1975 Am 1 and 2	- Fire-Resistance Test of Structures	1.4(1) (see definition of "standard fire test")
AS 1538 - 1974 Am 1	SAA Cold-formed Steel Structures Code	40.1(2)

Northern Territory Building Code

SCHEDULE 2 - continued

Code No. and date	Title	Regulation
AS 1562 - 1980	Design and Installation of Metal Roofing	28.1 (see Table 28.1) and 47.5
AS 1596 - 1983 Am 1	SAA LP Gas Code	25.2 and 25.7
AS 1611 - 1973	Asbestos Cement Corrugated Sheets for Roofing and Cladding	47.4
AS 1639 - 1974 Am 1, 1974	Design and Installation of Corrugated Asbestos Cement Roofing	47.4
AS 1640 - 1974 Am 1	SAA Brickwork Code	20.9(3) (see clauses 5(c) and 21(2) and (3) of Specification No. 20.9(3)), 28.1 (see Table 28.1), 36.2(1), (4) and 42.1(2)
AS 1653 - 1974	Calcium Silicate Bricks	28.1 (see Table 28.1)
AS 1657 - 1974 Am 1 and 2	SAA Code for Fixed Plat- forms, Walkways, Stairways and Ladders	53.9
AS 1664 - 1979 Corrig.	SAA Aluminium Structures Code	43.2(2)
AS 1668 - Part 1 - 1979 Am 1, 1979	SAA Mechanical Ventilation and Airconditioning Code - Fire Precautions in Buildings with Air- handling Systems	27.7 (see clause 8 of Specification No. 27.7), 51.1(3), 55.3(1), 55.4(3) and 59.2(1) (see item 7 of Table 59.2(1))
Part 2 - 1980	- Ventilation Requirements	51.1(3) and 55.3(1)
AS 1670 - 1983	SAA Code for Automatic Fire Alarm Installations	27.4(4), 51.1(3) and 59.2(1) (see items 4, 7 and 8 of Table 59.2(1))
AS 1680 - 1976	Code of Practice for Interior Lighting and the Visual Environment	50.3(3)

Northern Territory Building Code

SCHEDULE 2 - continued

Code No. and date	Title	Regulation
AS 1684 - 1979 Supps 1 to 22 Am 1, 1981 Am 2, 1981	SAA Timber Framing Code	41.1(2)
AS 1691 - 1975	SAA Domestic Oil-fired Appliances Installation Code	25.3 and 25.4
AS 1694 - 1974	Physical Barriers used in the Protection of Buildings against Subterranean Termites	48.2
AS 1720 - 1975 Am 1, 1981	SAA Timber Engineering Code	41.1(2)
AS 1726 - 1981	SAA Site Investigation Code	32.4
AS 1735 Part 1 - 1982 Part 11 - 1982	SAA Lift Code - General Requirements - Fire-rated Landing Doors	55.10(1) 22.8(1) and 55.10(1)
AS 1736 - 1975	Pliable Roof Sarking	47.6(1)
AS 1757 - 1975	Concrete Interlocking Roofing Tiles (Without Weathering Check)	47.2(2)
AS 1758 - 1975	Fixing of Concrete Inter- locking Roofing Tiles (Without Weathering Check)	47.2(2)
AS 1759 - 1975	Concrete Interlocking Roofing Tiles (With Weathering Check)	47.2(1)
AS 1760 - 1975	Fixing of Concrete Interlocking Roofing Tiles (With Weathering Check)	47.2(1)
AS 1841 - 1983	Portable Fire Extinguishers Water (Gas Container) Type	27.9(1)
AS 1842 - 1983	Portable Fire Extinguishers Water (Stored Pressure) Type	27.9(1)

Northern Territory Building Code

SCHEDULE 2 - continued

Code No. and date	Title	Regulation
AS 1844 - 1983	Portable Fire Extinguishers Foam (Gas Container) Type	27.9(1)
AS 1845 - 1983	Portable Fire Extinguishers Foam (Stored Pressure) Type	27.9(1)
AS 1846 - 1976	Portable Fire Extinguishers Dry Chemical Type	27.9(1)
AS 1847 - 1976	Portable Fire Extinguishers Carbon Dioxide Type	27.9(1)
AS 1848 - 1983	Portable Fire Extinguishers Halogenated Hydrocarbon Type	27.9(1)
AS 1849 - 1976	Identification Colours for Portable Fire Extinguishers	27.9(2)
AS 1850 - 1981	Portable Fire Extinguishers Classification, Rating and Fire Testing	27.9(2)
AS 1851 -	Maintenance of Fire Protection Equipment	
Part 1 - 1976	- Portable Fire Extinguishers	27.9(5) and 59.2(1) (see item 5 of Table 59.2(1))
Part 2 - 1981	- Fire Hose Reels	27.1 (see clause 19(2) of Specifi- cation No. 27.1) and 59.2(1) (see item 5 of Table 59.2(1))
Part 3 - 1978 Am 1	- Automatic Fire Sprinkler Systems	59.2(1) (see items 5 and 6 of Table 59.2(1))
AS 1859 - 1980	Flat Pressed Particleboard	28.1 (see Table 28.1)
AS 1860 - 1976	Installation of Particle- board Flooring	41.1(2)
AS 1903 - 1976	Reflective Foil Laminate	47.6(1)
AS 1904 - 1976 Corrig. Am 1, 1979	Installation of Reflective Foil Laminate in Buildings	47.6(1)

Northern Territory Building Code

SCHEDULE 2 - continued

Code No. and date	Title	Regulation
AS 1905 - Part 1 - 1982	SAA Fire Door Code - Fire Doors	21.1, 21.4(6) (see clause 18 of Specification No. 21.4(b)
Part 2 - 1981	- Fire Shutters	21.4(b) (see clause 18 of Specification No. 21.4(b)) and 21.5
AS 2049 - 1977	Terra Cotta Roofing Tiles	47.3
AS 2050 - 1977	Code of Practice for Fixing of Terra Cotta Roofing Tiles	47.3
AS 2057 - 1981	Soil Treatment for Protection of Buildings under Construction for Protection against Subterranean Termites	48.2
AS 2107 - 1977	Ambient Sound Levels for Areas of Occupancy within Buildings	27.7 (see clause 13 of Specification No. 27.7) and 59.2(1) (see item 7 of Table 59.2(1))
AS 2118 - 1978	Automatic Fire Sprinkler Systems	27.1 (see clause 24 of Specification No. 27.1), 59.2(1) (see items 6 and 8 of Table 59.2(1)) and (3)
AS 2159 - 1978	SAA Piling Code	34.4
AS 2185 - 1978	Fibrous Plaster Products	1.4(1) (see definition of "non- combustible")
AS 2208 - 1978	Safety Glazing Materials for Use in Buildings (Human Impact Considerations)	53.4(2), (3) and (4)
AS 2220 - 1978	Emergency Warning and Intercommunication Systems for Buildings	55.11

Northern Territory Building Code

SCHEDULE 2 - continued

Code No. and date	Title	Regulation
AS 2293 - Part 1 - 1983	Emergency Evacuation Lighting in Buildings - Installation Requirements	24.24(4) and 55.9
AS 2423 - 1980	Galvanized Wire Fencing Products	43.3(2)
AS 2427 - 1983	Smoke/Heat Release Vents	1.4(1) (see definition of "smoke- and-heat vent")
AS 2441 - 1983	Installation of Fire Hose Reels	27.2(3)
AS 2665 - 1983	Smoke/Heat Venting Systems - Design, Installation and Commissioning	6.1(1)(h), 6.2(3), 16.9(3), 19.2(2) (see Table 19.2(2)), 19.6(e), 19.7, 19.10 and 27.3(1) (see Table 27.3(1))
AS 3000 - 1981 Am 1 and 2	SAA Wiring Rules	27.1 (see clause 13 of Specification No. 27.1) and 27.4(4)
AS A123 - 1963	Mortar for Masonry Construction	28.1 (see Table 28.1)
AS Int. 324 - 1953	Metal Wall Ties for Brickwork	42.1(2) and 52.2(2)
AS Int. 326 - 1953	Bituminous Damp-proof Courses with Metal Centre	47.9
AS Int. 327 - 1953	Bituminous Damp-proof Courses with Fibre Felt Base	47.9