(2) A Class VIII building (erected before or after the commencement of this Ordinance) that is not or at any time ceases to be used for a handicraft or process—

(a) referred to in the Second Schedule; or

(b) in which a principal material of any kind is combustible,

shall not be so used unless the building complies with the relevant requirements of this Part.

19.11. (1) Upon production of a certificate, issued by the Board of Fire Exemption Commissioners, that in respect of a particular existing or proposed Class VII or Class VIII building it is of opinion that substantially all of the materials stored or displayed, or used in a handicraft or process, are non-combustible, the Council may exempt the building from the requirements of this Part.

(2) Upon production of a certificate by the Board of Fire Exemption Commissioners to the effect that—

(a) in respect of a particular existing or proposed building to which subclause (1) does not apply, satisfactory provisions alternative to those of Part 19, and additional to those prescribed by Part 27, have been made to restrict or combat the spread of fire; or

(b) in respect of a particular existing building which is proposed to be altered there is no necessity to require that the whole of the building as so altered shall be brought into conformity with the requirements of this Part,

the Council may exempt the building from any or all of the requirements of this Part.

(3) An exemption pursuant to subclause (2) shall be granted only by resolution of the Council—

(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 any recommendations included in the certificate of the Board of Fire Commissioners as to the requirements to be imposed.
19.12. (1) This clause shall apply, irrespective of any other provision of this Part, to any Class V, VI, VII, or VIII building of Type 1, 2, 3, 4, or 5 construction where—

(a) the total floor area throughout the building exceeds 36,000 m²; or

(b) the Council is of opinion, irrespective of total floor area, that special provisions should be made in a particular building to restrict or combat the spread of fire.

(2) The Council shall refer a matter arising under subclause (1) to the Board of Fire Commissioners for report and after consideration of any recommendation contained in their report, shall impose such special requirements for restricting or combating the spread of fire as it may consider desirable.

(3) Any special requirement pursuant to subclause (2) shall—

(a) be imposed only by resolution of the Council in the particular case;

(b) be imposed only by reason of the purposes for which the building is intended or adapted to be used; and

(c) be additional to the relevant requirements of this Part, except that exemptions may be granted from one or more of those requirements where the Board of Fire Commissioners so recommends.

GROUP V.—FIRE SAFETY AND FIRE RESISTANCE.

PART 20.—Fire Resistances of Structural Members.

20.1. Where a structural member of a building is required to have a fire-resistance rating, the structural member shall be—

(a) one that is deemed, pursuant to clause 20.10, to have the required fire-resistance rating; or

(b) one that is identical with a prototype that has been submitted to—

(i) the Standard Fire Test; or

(ii) a test that is similar to the Standard Fire Test, and is shown by documentary evidence in the form of a report, as referred to in clause 20.2, to have achieved the required fire-resistance rating; or

(c) one that is identical with a tested prototype as specified in paragraph (b), except for the variations permissible under clauses 20.3 or 20.4, as the case may be; or

(d) one that is approved by the Council pursuant to clause 20.5.
20.2. (1) The report referred to in paragraph (b) of clause 20.1 shall be an official report issued by one of the following testing authorities:

(a) Commonwealth Experimental Building Station, Commonwealth Department of Works;
(b) Fire Research Station, Building Research Establishment; Department of the Environment, Great Britain;
(c) National Bureau of Standards, United States of America;
(d) Underwriters' Laboratories Incorporated, United States of America;
(e) National Research Council, Canada; and
(f) Underwriters' Laboratories of Canada.

(2) The report shall fully describe the conditions of test, and the Details of form of construction of the tested prototype.

(3) Where a report issued pursuant to subclause (1) indicates that Conditions of acceptance, or compression forces developed as a result of the inability of the tested prototype to expand thermally because of the nature of its supports and its position during the tests, the following conditions shall apply:

(a) In the case of a deck or floor the report shall not be acceptable for the purposes of this Part.
(b) In the case of a steel beam, open-web joist or column the report shall certify that the temperature of the steel in the tested prototype did not exceed—
   (i) 538° C average; and
   (ii) 649° C maximum.

(4) The method of restraint may differ from that of the tested prototype, if calculations according to clause 20.3 are submitted and approved.

(5) A copy of the official report referred to in this clause shall be submitted to the Council by the person for whom the building is being erected, but the Council may waive this requirement if a copy of the report is already in its possession.

20.3. (1) Where the structural member 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 the prototype if evidence is produced to the Council to show that the following conditions will be met:

(a) The calculated stresses at the centre of the span of the structural member under the total dead and live load shall not exceed those in the centre of the span of the construction referred to in the official test report.
(b) The calculated tensile stress in steel in the structural member shall not be greater at the centre of the span under the total dead and live load than—

(i) 100 per cent of the design tensile stress in the steel referred to in the official test report, where the average temperature of the steel measured in accordance with the requirements of the Standard Fire Test does not exceed 538° C; or

(ii) 70 per cent of that stress, where the average temperature of the steel so measured is 593° C; or

(iii) between 100 and 70 per cent of that stress, on a proportionally interpolated basis, where the average temperature of the steel so measured is between 538° C and 593° C.

(c) A negative bending moment, if any, at either end of the span, if additional to a negative bending moment referred to in the official test report—

(i) may be taken into account in the calculations; but

(ii) shall not be deemed to relieve the central bending moment by more than one-tenth thereof,

and two such negative bending moments, one at each end of the span, may be so taken into account in the calculations but collectively shall not be deemed to relieve the central bending moment by more than one-fifth.

(d) If the tested prototype contained a feature which produced a negative bending moment during the relevant fire-resistance test, that feature shall be repeated in the structural member proposed to be used.

(e) If a condition of horizontal restraint was introduced during the relevant fire-resistance test of the tested prototype, the structural member proposed to be used shall be designed to compensate for that condition.

Evidence of compliance with conditions.

(2) The evidence referred to in subclause (1) shall be in the form of a report and calculations prepared by a practising structural engineer.

Variations in columns.

20.4. A steel column may vary from the size of the tested prototype if—

(a) its cross-sectional profile is similar to that of the tested prototype; and

(b) its slenderness ratio and ratio of surface area to mass per unit of length are not greater than those of the tested prototype.
20.5. (1) Where a structural member that is required to have a fire-resistance rating—

(a) is not deemed, pursuant to clause 20.10, to have that rating; and

(b) departs in some minor degree from the tested prototype but in a manner other than that permissible under clause 20.3 or clause 20.4,

the Council may approve its use upon production of a report in accordance with subclause (2).

(2) For the purposes of subclause (1), the Council may accept a report in the following terms from one or other of the authorities indicated, whichever it considers appropriate in the particular case:

(a) A testing authority registered with the National Association of Testing Authorities, certifying that the materials incorporated in the structural member have physical and chemical properties that are identical with those of the materials—

(i) incorporated in a tested prototype that has achieved the required fire-resistance rating; and

(ii) described in the relevant report of that test.

(b) One of the authorities listed in clause 20.2—

(i) certifying that, in the opinion of the authority concerned, the proposed construction would, despite the minor departures from a tested prototype, be capable of achieving the required fire-resistance rating if submitted to the Standard Fire Test; and

(ii) giving details of materials, construction, and methods of restraint or support which must be complied with to achieve the required fire-resistance rating.

20.6. Where dimensions of components or materials are stated in this Part they are minimum acceptable dimensions and shall be calculated according to the following:

(a) The required dimensions for—

(i) burnt-clay and burnt-shale brickwork;

(ii) sand-lime brickwork;

(iii) solid concrete blockwork; and

(iv) timber,

are, unless otherwise stated to the contrary, nominal dimensions subject to normal trade tolerances.

(b) Where hollow concrete blocks are permitted according to Table 20.10 their required thickness shall be calculated according to the rules set out in the annexure to that Table.

(c) For materials not referred to in paragraphs (a) and (b) the required dimensions are actual measured dimensions subject to normal trade tolerances.
20.7. (1) A fire-resistance rating achieved when using any material of Group A, B, C, D, or E, set out below this subclause, as an ingredient in concrete or plaster, shall be deemed to apply equally when any other material of the same group is used in the same proportions in concrete or plaster:

- Group A: Any portland cement.
- Group B: Any lime.
- Group C: Any dense sand.
- Group D: Any dense calcareous aggregate, including any limestone or any calcareous gravel.
- Group E: Any dense siliceous aggregate, including any basalt, diorite, dolerite, granite, grano-diorite, or trachyte.

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

20.8. (1) If a structural member is required to have a fire-resistance rating and it incorporates any of the materials mentioned in this clause, their uses shall be subject to such of the requirements herein as the case requires.

(2) Bricks, terra-cotta blocks, and concrete blocks shall be laid in cement mortar or composition mortar and such mortars shall comply with the relevant provisions of Part 28.

(3) Gypsum blocks shall be laid in gypsum-sand mortar or lime mortar.

(4) Gypsum-sand mortar and gypsum-sand plaster—

(a) shall consist of not more than 3 parts by volume of sand to 1 part by volume of gypsum; or

(b) shall consist of not more than 2½ parts by volume of sand to 1 part by volume of gypsum, if lime putty is added, in which case the lime putty shall not exceed 5 per cent by volume of the mixed ingredients.

(5) Where plaster is prescribed in Table 20.10 the plaster—

(a) shall consist of—

(i) cement and sand; or

(ii) cement, lime and sand, having a thickness not less than that shown in the Table; and

(b) may be finished with gypsum, gypsum-sand, gypsum-perlite or gypsum-vermiculite plaster, or with lime putty.
(6) Where gypsum-vermiculite or gypsum-perlite plaster is prescribed in Table 20.10 the plaster—

(a) shall have a thickness not less than that shown in the Table; and shall conform with the following:

(i) Where the required thickness is less than 25 mm the plaster shall be applied in either one or two coats each consisting of material in the proportion of 1 m³ of perlite or vermiculite to 640 kg of gypsum.

(ii) Where the required thickness is more than 25 mm the plaster shall be applied in two coats, the first of which shall consist of material in the proportions of 1 m³ of perlite or vermiculite to 800 kg of gypsum and the second of which shall consist of material in the proportions of 1 m³ of perlite or vermiculite to 530 kg of gypsum.

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

(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/m²;

(b) have not less than 98 meshes/m; and

(c) be protected against corrosion by galvanising or other approved method.

(9) Where plaster used as a fire-protective material has a thickness exceeding 19 mm the plaster shall be reinforced with—

(a) expanded metal lath complying with subclause (8); or

(b) 12.7-mm x 12.7-mm x 0.71-mm galvanised steel wire mesh,

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

20.9. (1) The fire-protective covering of a steel column, if of "lightweight construction" as defined in clause 17.3, shall be protected by metal or other suitable material, if the column is liable to damage from the movement of vehicles, materials, or equipment, or any like cause.

(2) In addition, where any such covering so subject to injury is not in continuous contact with the column, the voids concerned shall be filled solid, with approved non-combustible material, to a height of not less than 1200 mm above each floor.
(3) Where—

(a) a steel column extends through two or more storeys; and

(b) its fire-protective covering is not in continuous contact with it,

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

20.10. (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 of Australian Standard CA2, "SAA Code for Concrete in Buildings" (according, where relevant, to the loads to be supported by the member); and

(b) the types and thicknesses of the fire-protective concrete or other material used therein are in accordance with those given in that Appendix,

shall be deemed to have the relevant fire-resistance rating set out in that Appendix.

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

(a) the cross-sectional dimensions of the member are not less than those given in Australian Standard CA35, "SAA Prestressed Concrete Code" (according, where relevant, to the loads to be supported by the member); and

(b) the types and thicknesses of the fire-protective concrete or other material used therein are in accordance with those given in that Standard,

shall be deemed to have the relevant fire-resistance rating set out in that Standard.

(3) A structural member listed in column 1 of Table 20.10 in which the construction incorporates a material or combination of materials listed opposite thereto in column 2, shall be deemed to have the fire-resistance rating at the head of column 3, 4, 5, 6, or 7, as the case may be if—

(a) the principal material has the thickness, if any, listed in the relevant column;

(b) the construction meets the conditions or requirements set out in the numbered clauses, if any, listed opposite thereto in column 8 and included in the annexure to the Table; and

(c) the construction meets all other relevant requirements of this Ordinance.
(4) A blank space in any of columns 3 to 7 indicates that the relevant construction has not achieved the particular fire-resistance rating concerned; or the relevant construction has not been tested to achieve the particular fire-resistance rating concerned.

(5) Where a particular type and thickness of construction is deemed to have a particular fire-resistance rating that construction shall be deemed to satisfy any requirement for a lower fire-resistance rating.

**TABLE 20.10.**

_Fire-resistance ratings deemed to apply to certain structural members._

Figures appearing in columns 3, 4, 5, 6, and 7 denote thicknesses in millimetres of materials, and are the thicknesses of the principal material of construction measured according to Clause 20.6.

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Thickness of principal material (millimetres)</th>
<th>Annexure reference—clause number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural member</td>
<td>Construction of member</td>
<td>1 hr</td>
<td>1½ hr</td>
</tr>
<tr>
<td>Loadbearing walls whether internal or external, and common and party walls whether load-bearing or non-loadbearing.</td>
<td>Solid walls and cavity walls, excluding the width of the cavity—</td>
<td>110</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>Ashlar stone masonry</td>
<td>300</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Solid pressed clay bricks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extruded, cored clay bricks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solid concrete blocks and concrete bricks</td>
<td>127</td>
<td>150</td>
</tr>
<tr>
<td>Concrete—</td>
<td>Unreinforced</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reinforced</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prestressed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-loadbearing walls whether internal or external (except common and party walls—see above).</td>
<td>Solid walls and cavity walls, excluding the width of the cavity—</td>
<td>100</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>Ashlar stone masonry</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extruded, cored or lattice clay bricks—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unplastered</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plastered 19 mm thick on both sides</td>
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<td></td>
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<tr>
<td></td>
<td>Plastered 19 mm thick on both sides</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solid pressed clay and calcium silicate bricks—</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unplastered</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plastered 19 mm thick on both sides</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solid concrete blocks and concrete bricks—</td>
<td>100</td>
<td>127</td>
</tr>
<tr>
<td></td>
<td>Cavity wall—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>230-mm cavity wall—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>One leaf of solid clay brick on flat and one leaf solid clay brick on edge</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>250-mm cavity wall—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>One leaf of solid clay brick and one leaf of concrete block stretcher units</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete—</td>
<td>177</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unreinforced</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No-fines, plastered 19 mm thick on both sides</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reinforced</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prestressed</td>
<td></td>
<td></td>
</tr>
</tbody>
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Table amended, 9/8/74.
<table>
<thead>
<tr>
<th>Structural member</th>
<th>Construction of member</th>
<th>Thickness of principal material (millimetres)</th>
<th>Annexure reference—clause number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 hr</td>
<td>1½ hr</td>
</tr>
<tr>
<td><strong>Non-loadbearing walls</strong></td>
<td><strong>Hollow blocks of concrete with—</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Category A aggregate</td>
<td>66</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Category B aggregate</td>
<td>73</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>Category C aggregate</td>
<td>82</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td><strong>Plastered 19 mm thick one side</strong></td>
<td>150</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Plastered 19 mm thick on both sides</strong></td>
<td>100</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td><strong>Solid gypsum blocks</strong></td>
<td>75</td>
<td>88</td>
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<tr>
<td></td>
<td><strong>Gypsum-perlite or gypsum-vermiculite plaster on metal lath and clay</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Steel columns and pipe columns.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Columns incorporated in, or in contact on one or more sides with solid masonry or concrete walls not less than 100 mm thick, with fire protection of—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Solid clay bricks with—</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Column spaces filled</td>
<td>50</td>
<td>50</td>
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<tr>
<td></td>
<td>Column spaces not filled</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td><strong>Solid concrete blocks with—</strong></td>
<td></td>
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<tr>
<td></td>
<td>Column spaces filled</td>
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<td>Column spaces not filled</td>
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<tr>
<td></td>
<td><strong>Gypsum blocks laied in gypsum-sand mortar with—</strong></td>
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<td></td>
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<tr>
<td></td>
<td>Column spaces filled</td>
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<td>50</td>
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<tr>
<td></td>
<td>Column spaces not filled</td>
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</tr>
<tr>
<td></td>
<td><strong>Hollow terra-cotta blocks plastered 13 mm thick with—</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Column spaces filled</td>
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<td>50</td>
</tr>
<tr>
<td></td>
<td>Column spaces not filled</td>
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</tr>
<tr>
<td></td>
<td><strong>Structural concrete cast in situ around mesh or binding, and non-loadbearing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>As above, plastered 13 mm thick</td>
<td>25</td>
<td>32</td>
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<tr>
<td></td>
<td>Columns incorporated in, or in contact on one or more sides with solid masonry or concrete walls not less than 100 mm thick, with fire protection of—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Structural concrete cast in situ around mesh or binding and designed to be load bearing and incorporating—</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Category B or C aggregate</td>
<td>25</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Category A aggregate</td>
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<td>32</td>
</tr>
<tr>
<td></td>
<td><strong>Gypsum cast in situ</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Gypsum-perlite or gypsum-vermiculite plaster—</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Sprayed on metal lath</strong></td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td><strong>Sprayed to contour</strong></td>
<td>22</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td><strong>Columns not incorporated in, or in direct contact with solid masonry or concrete walls not less than 100 mm thick, with fire protection of—</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Solid clay bricks with—</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Column spaces filled</td>
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<td>50</td>
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<tr>
<td></td>
<td>Column spaces not filled</td>
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<td>50</td>
</tr>
<tr>
<td></td>
<td><strong>Solid concrete blocks with—</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td>Column spaces not filled</td>
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<td>Thickness of principal material (millimetres)</td>
<td>Annexure reference clause number</td>
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<tr>
<td>---------------------------------------</td>
<td>------------------------</td>
<td>----------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Steel columns and pipe columns—continued.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Columns not incorporated in, or in direct contact with solid masonry or concrete walls not less than 100 mm thick, with fire protection of—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gypsum blocks laid in gypsum-sand mortar with—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Column spaces filled</td>
<td>50</td>
<td>75, 100</td>
<td>11, 12</td>
</tr>
<tr>
<td>Column spaces not filled</td>
<td>50</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Hollow terra-cotta blocks, plastered 13 mm thick with—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Column spaces filled</td>
<td>50</td>
<td>75, 100</td>
<td>9, 9, 11, 12</td>
</tr>
<tr>
<td>Column spaces not filled</td>
<td>50</td>
<td></td>
<td>9, 11</td>
</tr>
<tr>
<td>Structural concrete cast in-situ around mesh or binding and not subjected to any applied loading</td>
<td>25</td>
<td>32, 38</td>
<td>51, 63, 11, 12, 13</td>
</tr>
<tr>
<td>As above, plastered 13 mm thick</td>
<td>25</td>
<td>32, 38</td>
<td>51, 6, 11, 12, 13</td>
</tr>
<tr>
<td>Structural concrete cast in-situ around mesh or binding and designed to be load-bearing and incorporating—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category B or C aggregate</td>
<td>25</td>
<td>38, 44</td>
<td>63, 8, 11, 12, 13</td>
</tr>
<tr>
<td>Category A aggregate</td>
<td>25</td>
<td>32, 38</td>
<td>51, 8, 11, 12, 13</td>
</tr>
<tr>
<td>Columns not incorporated in, or in direct contact with solid masonry or concrete walls not less than 100 mm thick, with fire protection of—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gypsum cast in-situ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gypsum-perlite or gypsum-vermiculite plaster—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sprayed on metal lath</td>
<td>19</td>
<td>22, 29</td>
<td>38, 48, 14, 15</td>
</tr>
<tr>
<td>Sprayed to contour</td>
<td>25</td>
<td>32, 41</td>
<td>54, 63</td>
</tr>
<tr>
<td>Concrete columns.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Columns of—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reinforced concrete</td>
<td></td>
<td></td>
<td>Refer to subclause (1) of clause 20.10.</td>
</tr>
<tr>
<td>Prestressed concrete</td>
<td></td>
<td></td>
<td>Refer to subclause (2) of clause 20.10.</td>
</tr>
<tr>
<td>Steel open-webbed joists, beams, girders and trusses in direct contact with solid reinforced concrete slab or hollow-block floor or roof construction, with fire protection of—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural concrete encasement incorporating—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category B or C aggregate</td>
<td>25</td>
<td>32, 38</td>
<td>51, 63, 8, 16</td>
</tr>
<tr>
<td>Category A aggregate</td>
<td>25</td>
<td>25, 32</td>
<td>44, 57</td>
</tr>
<tr>
<td>Gypsum-perlite or gypsum-vermiculite plaster—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sprayed on metal lath</td>
<td>19</td>
<td>22, 25</td>
<td>35, 44, 15, 17</td>
</tr>
<tr>
<td>Sprayed to contour</td>
<td>22</td>
<td>25, 35</td>
<td>48, 57</td>
</tr>
<tr>
<td>Joists, beams, girders and trusses not in direct contact with solid reinforced concrete slab or hollow-block floor or roof construction with fire protection of—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural concrete encasement incorporating—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category B or C aggregate</td>
<td>25</td>
<td>38, 44</td>
<td>63, 8, 16</td>
</tr>
<tr>
<td>Category A aggregate</td>
<td>25</td>
<td>32, 38</td>
<td>51, 70</td>
</tr>
<tr>
<td>Gypsum-perlite or gypsum-vermiculite plaster—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sprayed on metal lath</td>
<td>19</td>
<td>22, 29</td>
<td>38, 48, 15, 17</td>
</tr>
<tr>
<td>Sprayed to contour</td>
<td>25</td>
<td>32, 41</td>
<td>54, 63</td>
</tr>
<tr>
<td>Floors, roofs, and ceilings.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reinforced</td>
<td></td>
<td></td>
<td>Refer to subclause (1) of clause 20.10.</td>
</tr>
<tr>
<td>Prestressed</td>
<td></td>
<td></td>
<td>Refer to subclause (2) of clause 20.10.</td>
</tr>
</tbody>
</table>

Refer to subclause (1) of clause 20.10. Refer to subclause (2) of clause 20.10.
ANNEXURE TO TABLE 20.10.

1. Ashlar Stone Masonry. The ashlar stone masonry used shall be in a portion of the building containing not more than two storeys, and shall not be of—

(a) aplite, granite, grandodiorite, quartz dacite, quartz diorite, quartz porphyrite, or quartz porphyry; or

(b) conglomerate, quartzite, or sandstone; or

(c) chert or flint; or

(d) limestone or marble.

2. * * * * *

3. Cored or Lattice Bricks. The cored or lattice bricks used shall have a net volume, exclusive of cored and similar holes, of not less than 75 per cent of their gross volume, measured on the overall rectangular shape of the bricks.

4. Cavity Walls of Solid Clay Bricks. Cavity walls of solid clay bricks in which one leaf is on flat and one leaf is on edge shall be subject to the following rules:

(a) One leaf of brickwork shall have an actual thickness of not less than 110 mm and the other leaf shall have an actual thickness of not less than 75 mm.

(b) The thickness of brickwork shall be subject to the tolerances permitted for bricks by Specification No. 4 “Burnt Clay and Shale Building Bricks”.

(c) The cavity shall be not more than 50 mm wide.

5. Cavity Walls having one leaf of Solid Clay Bricks and one leaf of Concrete Blocks. Cavity walls of solid clay bricks and concrete blocks shall be subject to the following rules:

(a) The outer leaf of the wall shall consist of solid clay bricks not less than 110 mm thick.

(b) The inner leaf of the wall shall consist of solid or hollow concrete blocks having—

(i) an actual thickness of not less than 90 mm; and

(ii) a net thickness in the case of hollow concrete blocks of not less than 68 mm, calculated in accordance with the rules applicable to concrete blocks of Category C aggregate according to clause 7.

(c) The leaves shall be tied with 3.65-mm wire ties according to Australian Standard Interim 324, “Metal Wall Ties for Brickwork”.

(d) The cavity shall be not more than 50 mm wide.

6. Certain Tabulated Thicknesses Exclude Plaster. The thickness of plastering used shall be additional to the listed thickness of the principal material.

7. Thickness of Hollow Concrete Blocks.

(1) The thickness listed in Table 20.10 shall be calculated by taking the total actual volume of a concrete block, subtracting the volume of all core holes and dividing the resultant figure by the actual area of one vertical exposed face of the block.
(2) Where the blocks are plastered the thickness of the block according to subclause (1) may be increased by the amount shown in the following table:

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

<table>
<thead>
<tr>
<th>Type of aggregate used in manufacture of blocks (See clause 8)</th>
<th>Type of plaster and its location</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cement and sand, or cement, lime and sand on one face only</td>
<td>Cement and sand, or cement, lime and sand on both faces</td>
</tr>
<tr>
<td>Category A aggregate.</td>
<td>No concession shall be made.</td>
<td>Equivalent thickness of concrete block without plaster.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>plus 25 per cent of total thickness of plaster.</td>
</tr>
<tr>
<td>Category B aggregate.</td>
<td>No concession shall be made.</td>
<td>Equivalent thickness of concrete block without plaster.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>plus 35 per cent of total thickness of plaster.</td>
</tr>
<tr>
<td>Category C aggregate.</td>
<td>No concession shall be made.</td>
<td>Equivalent thickness of concrete block without plaster.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>plus 50 per cent of total thickness of plaster.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Equivalent thickness of concrete block without plaster.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>plus 1.25 times the total thickness of plaster.</td>
</tr>
</tbody>
</table>

8. Aggregates for Concrete and Concrete Blocks.

(1) Category A aggregate shall comply with the following requirements:

(a) The aggregate shall consist of particles with a uniformly porous and cellular structure.

(b) The aggregate may 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 certain pumices and certain scorias, being porous volcanic-glass formations, friable in character and predominantly light grey in colour for pumice and dark grey for scoria.
(c) Aggregate other than pumice or scoria shall not contain more than 65 per cent by weight of silica (SiO₂) when determined by chemical analysis.

(2) Category B aggregate shall be one of the following:
   (a) Coal or coke cinders.
   (b) Scorias other than those referred to in subclause (1).
   (c) Unexpanded blast-furnace slag.

(3) Category C aggregate shall comply with the following:
   (a) Aggregate shall comply with the Australian Standard A77, "Aggregates for Concrete".
   (b) Aggregate shall be—
       (i) calcareous material;
       (ii) river gravel, granite, feldspar, dolerite, diorite, basalt; or
       (iii) greywacke or sandstone.
   (c) Aggregate shall contain not more than 65 per cent by weight of silica (SiO₂), determined by chemical analysis.

(4) Fine aggregate shall comply with the following:
   (a) Where Category A aggregates are used the fine aggregate shall be of the same material as is used for the coarse aggregate, or if silicious sand is used its total amount shall be not more than 20 per cent of the total weight of all fine and coarse aggregates.
   (b) Lightweight fine aggregate shall have a density when dry and loose of not more than 1120 kg/m³.


(1) The volume of cored holes in a block shall not exceed—
   (a) 35 per cent of the gross volume of the block in a block of 75-mm nominal thickness; or
   (b) 40 per cent of the gross volume of the block in a block of 100-mm nominal thickness; or
   (c) 50 per cent of the gross volume of the block in a block of 150-mm nominal thickness.

(2) The net thickness of a terra-cotta block shall be the nominal total thickness of that 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 Steel Columns and Pipe Columns.

(1) Where the principal fire-protective construction of a steel column or pipe column is brickwork, blockwork, concrete, or similarly hard construction placed against the steel, the thickness listed for the material of that construction shall be construed to mean the thickness measured from the face of the steel or from the outer part of any rivet or bolt, whichever is the nearer to the outside of the fire-protective construction, subject to the provisions of subclause (2).

(2) The following rules shall apply to construction other than terra-cotta blockwork:
   (a) Where the construction has an overall thickness of not less than 38 mm the measurement may be made disregarding rivet heads.
(b) Where the construction has an overall thickness of not less than 50 mm, the measurement may be made disregarding any part of a bolt that is not a high-tensile bolt.

(c) Where the construction has an overall thickness of not less than 50 mm, any splice plate having no part located in that part of the column that begins 915 mm above the level of a floor, and terminates at the underside of the floor or roof next above, may encroach upon that thickness by not more than one-quarter thereof.

(d) Where the construction is in a column intended to have a 4-hour fire-resistance rating, the edge of any flange not more than 38 mm thick (measured inclusive of any splice plate) that projects more than 63 mm beyond a web may encroach by 12 mm upon the overall thickness.

(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 similarly reinforced in every horizontal joint.

12. Re-entrant and Like Parts of Certain Steel Columns. Where steel columns are required to have a 3-hour or a 4-hour fire-resistance rating, re-entrant parts and parts, if any, between the required fire-protective material and the steel shall be filled with concrete or other hard fire-protective material.

13. Reinforcement of Fire-protective Concrete. A steel wire mesh or binding shall be placed approximately 20 mm from the outer surface of the fire-protective concrete used, and the mesh or binding shall include wires—

(a) having a diameter of not less than 3.25 mm; and

(b) spaced at not more than 100-mm centres vertically, except that, where the concrete has an overall thickness of not less than 50 mm, wires having a diameter of not less than 4.87 mm 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. In column protection of gypsum-perlite or gypsum-vermiculite plaster on metal lath as listed—

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

(b) the lath shall be of—

(i) steel expanded metal, not less than 12 mm clear of the column where the plaster has a thickness of 35 mm or more, or not less than 6 mm clear of the column otherwise, 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 clear of the column.

15. Material Sprayed on Metal Lath. The 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 and Trusses. Where the principal fire-protective material of a steel open-webbed joist, beam, girder, or truss is structural concrete encasement—

(a) the thickness of such encasement listed shall be construed to mean the minimum thickness measured from the face of the steel or from the outer part of any rivet or bolt, whichever is the nearer to the outside of the encasement, except that—

(i) where the encasement has an overall thickness of not less than 38 mm the measurement may be made disregarding rivet heads; and

(ii) where the encasement has an overall thickness of not less than 50 mm 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 thereof, and the mesh or binding shall include wires—
   (i) having a diameter of not less than 3.25 mm; and
   (ii) spaced at not more than 100-mm centres horizontally, except that, where the concrete has an overall thickness of not less than 50 mm, wires having a diameter of not less than 4.7 mm and spaced at not more than 150-mm centres horizontally may be used instead; and

(c) where the encasement, being on the soffit of a joist, beam, girder, or truss, has a thickness of less than 38 mm plus one-twelfth the width of that soffit, it shall be mechanically vibrated into position.

17. Gypsum-perlite Platter, or Gypsum-vermiculite Plaster as Protection for Joists, Beams and the like. Where the protection is applied to a steel open-webbed joist, beam or truss, the lath shall be spaced not less than 20 mm clear from the steel, using steel furring channels at not more than 610-mm centres.

18. Limitation on Use of Extruded, Cored Clay Bricks. The extruded, cored clay bricks used in loadbearing walls, whether internal or external, or in common or party walls, whether loadbearing or non-loadbearing, shall be in a portion of the building containing not more than four storeys.

GROUP V.—FIRE SAFETY AND FIRE RESISTANCE.

PART 21.—Fire Doors, Smoke Doors, Fire Windows, and Fire Shutters—Construction Requirements.

21.1. Every required fire door shall—

   (a) comprise a complete doorset as described in Australian Standard CA 57 "S.A.A. Fire Door Code";

   (b) comply with the relevant provisions of that Standard; and

   (c) subject to the variations permissible under that Standard, be identical with a tested prototype which—

      (i) has achieved the required fire-resistance rating;

      (ii) during the first 30 minutes after the commencement of the fire test, did not have a rise in temperature on the side remote from the furnace of more than 121°C, except in any glazed portion thereof.

21.2. Notwithstanding the provisions of Australian Standard CA 57 "S.A.A. Fire Door Code", a required fire door—

   (a) shall not incorporate glazing if it protects an opening in a fire wall; and

   (b) shall not incorporate glazing in excess of 64.6 x 10³ mm² in any other case.

21.3. Every required smoke door shall—

   (a) comprise one door-leaf or two door leaves;

   (b) be side-hung;

   (c) inhibit the penetration of smoke, at every part, through the doorway to which it is fitted; and

   (d) be of solid material which may include glazing.
21.4. Every required one-hour fire window shall be—

(a) a window that is—

(i) identical in construction with a prototype thereof that has been subjected to the Standard Fire Test and in that test has demonstrated its ability, for one hour, to prevent the spread of flames and hot gases through the window opening;

(ii) installed in the same manner as was the tested prototype referred to in subparagraph (i); and

(iii) not used in an opening that is greater in height or width than the opening in which the prototype was tested under the Standard Fire Test; or

(b) a window of wired glass in framing of galvanized steel, complying as to maximum dimensions, construction, and installation with Specification No. 1 “Fire Windows” as approved by the Minister for Local Government and published in the Gazette; or

(c) a glass-block window panel, complying as to maximum dimensions, construction, and installation with Specification No. 2 “Hollow Glass-block Window Panels” as approved by the Minister for Local Government and published in the Gazette.

21.5. Every required fire shutter shall be—

(a) a shutter that is—

(i) identical with a prototype thereof that has been subjected to the Standard Fire Test and in that test has demonstrated its ability, for the required period, to prevent the spread of fire through the opening concerned;

(ii) erected in the same manner as was the tested prototype referred to in subparagraph (i); and

(iii) not used in an opening that is greater in height or width than the opening in which the prototype was tested under the Standard Fire Test; or

(b) a shutter comprising a curtain of interlocking steel slats, mounted on a barrel and sliding in steel guides, and complying as to maximum dimensions, construction, and installation with Specification No. 3 “Fire-resistant Roller Shutters” as approved by the Minister for Local Government and published in the Gazette.

GROUP V.—FIRE SAFETY AND FIRE RESISTANCE.

PART 22.—Location and Protection of Openings.

22.1. This Part shall apply to every building except a Class I or Class X building.
22.2. 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 section of the wall, such as a panel-filled section, that does not have the relevant fire-resistance rating specified by Part 16 for the structural sections of the wall.

22.3. (1) This clause shall apply to buildings of Type 1 and Type 2 construction, but shall not extend to—

(a) a building or portion of a building designed, constructed, or adapted as an open-deck parking station; or

(b) openings above one another in a stairway.

(2) Where any part of an opening in an external wall is situated vertically above another opening in the storey next below, there shall be provided between those openings—

(a) a spandrel or other vertical construction complying with subclause (3); or

(b) a slab or other horizontal construction complying with subclause (4) or the variations from subclause (4) that are permissible under subclause (5).

(3) If a spandrel or other vertical construction is provided between the openings the following rules shall apply:

(a) The construction shall comprise non-combustible material having the relevant fire-resistance ratings listed in Table 16.7 (in the case of Type 1 construction) or Table 16.8 (in the case of Type 2 construction).

(b) The construction shall be not less than 900 mm in height.

(c) There shall be no voids between the edge of the floor and the inside face of the construction.

(4) If a slab or other horizontal construction is provided between the openings, the following rules shall apply:

(a) The construction shall comprise non-combustible material having a fire-resistance rating of not less than one hour.

(b) The construction shall project outwards from the plane of the opening in the higher storey for a distance of not less than 1100 mm.

(c) The construction shall extend along the wall at each side of the two openings concerned for a distance of not less than 450 mm beyond the lateral limits of those openings.
(5) The following variations from the rules set out in subclause (4) shall be permissible:

(a) It shall not be necessary for the slab or other horizontal construction to comply with paragraph (b) of subclause (4) if a combination of the following dimensions produces an overall dimension of not less than 2200 mm:

(i) The horizontal dimension from the plane of the opening in the lower storey to the outside edge of the slab or other horizontal construction. (If the plane of the opening in the lower storey is behind the plane of the opening above, the measurement shall be taken as though the lower opening were in the same plane as that of the opening above.)

(ii) The vertical dimension, measured from the level of the top of the opening in the lower storey (or from any part of the slab or other horizontal construction which extends below that level) to the bottom level of the opening in the upper storey (or to any part of the slab or other horizontal construction which extends above that level). If such vertical dimension is less than 300 mm, it shall not be counted in the calculations.

(iii) The horizontal dimension from the outside edge of the slab or other horizontal construction to the plane of the opening in the upper storey.

(b) It shall not be necessary for the construction at any side of the two openings to comply with paragraph (c) of subclause (4) if—

(i) the construction is provided with a vertical upstand at or beyond the lateral limits of the two openings;

(ii) the height of the vertical upstand is not less than 300 mm; and

(iii) the combination of the height of the vertical upstand plus twice the distance, if any, by which the construction extends beyond the lateral limits of the two openings produces an overall dimension of not less than 900 mm.

(6) Notwithstanding anything to the contrary in this clause, the Approval Council may, in lieu of requiring compliance with the foregoing provisions, approve the use in an external wall of a form of construction which—

(a) comprises non-combustible material having a fire-resistance rating of not less than one hour; and

(b) is capable, in the opinion of the Council, of inhibiting the spread of fire from storey to storey via openings in the wall either better or as effectually as construction complying with subclauses (3), (4), or (5).
22.4. (1) In a fire zone, the following openings in an external wall shall be protected in accordance with subclause (2):

(a) An opening that faces and is less than 6 m from the farther boundary of a road adjoining the site, other than one located in a storey at or near ground level.

(b) An opening that faces and is less than 3 m from the boundary of an adjoining allotment of land.

(2) The protection referred to in subclause (1) shall be as follows:

(a) Doorways—approved external automatic sprinklers; or approved external automatic drenchers; or one-hour fire doors (self-closing or automatic);

(b) Windows and other glazed areas—approved external automatic sprinklers; or approved external automatic drenchers; or one-hour fire windows (automatic or permanently fixed in closed position); or one-hour automatic fire shutters;

(c) Other openings—approved external automatic sprinklers; or approved external automatic drenchers; or construction having a fire-resistance rating of not less than one hour.

22.5. Openings between successive floors in an external wall referred to in clause 22.4 shall not occupy more than one-third of the area of the wall between those floors, except where the openings face a public road and are located in a storey at ground level.

22.6. (1) No opening shall be permitted in a fire wall except—

(a) doorways protected in accordance with this clause; or

(b) openings for services installed or protected in accordance with clause 22.13.

(2) A doorway in a fire wall shall be protected by one of the following alternative methods:

(a) Two fire doors or fire shutters, one on each side of the doorway, each of which shall—

(i) have a fire-resistance rating of not less than half that required by Part 16 for the fire wall; and

(ii) be self-closing, or automatic if the automatic closing device is so designed as to operate in the event of fire in a section on either side of the fire wall; or

(b) A fire door on one side and a fire shutter on the other side of the doorway, each of which shall comply with subparagraphs (i) and (ii) of paragraph (a); or
(c) A single fire door or fire shutter which—

(i) has a fire-resistance rating of not less than Part 16 for the fire wall; and

(ii) is self-closing, or automatic if the automatic closing device is so designed as to operate in the event of fire in a section on either side of the fire wall.

(3) The aggregate width of openings for doorways in a fire wall shall not exceed one-half of the length of the fire wall concerned.

22.7. Every doorway that opens to a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp (not being a doorway opening to a road or open space) shall be protected by a self-closing one-hour fire door.

22.8. (1) Where, pursuant to Part 23, a lift shaft is required to be fire-isolated, the entrance doorways to that shaft shall be protected by one-hour fire doors that—

(a) comply with the provisions of Australian Standard CA3 “SAA Doorways, Lift Code” relating to fire-rated lift landing doors; and

(b) 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.

(2) Lift call panels, indicator panels and other panels in the Lift walls of a fire-isolated lift shaft shall, if they exceed $32.5 \times 10^8 \text{ mm}^2$ in area, be backed by construction having a fire-resistance rating of not less than one hour.

22.9. (1) In a Class II or Class III building, every doorway providing access from a sole-occupancy unit or a room not within a sole-occupancy unit to—

(a) a public corridor, public hallway, or the like; or

(b) the landing of an internal non-fire-isolated stairway serving as a required exit,

shall be protected in accordance with subclause (3).

(2) A doorway providing access from a sole-occupancy unit to another sole-occupancy unit or to a room not within a sole-occupancy unit shall be protected in accordance with subclause (3).

(3) The protection required by subclauses (1) and (2) shall be as follows:

(a) In a building of Type 1 or Type 2 construction—a self-closing one-hour fire door.

(b) In a building of Type 3, 4 or 5 construction—a self-closing, tight fitting, solid core door, not less than 35 mm thick.
(4) Notwithstanding anything to the contrary in this clause, the Council may permit the omission of fire doors in Class II or Class III buildings of Type 1 or Type 2 construction upon production of a certificate from the Board of Fire Commissioners certifying that, in its opinion, such doors may be omitted and subject to such other requirements, if any, recommended by the Board.

22.10. The doorway of a Class IV portion of a building providing access to any internal part of the building not within the Class IV portion shall be protected as follows:

(a) In a building of Type 1 or Type 2 construction—a self-closing one-hour fire door.

(b) In a building of Type 3, 4 or 5 construction—a self-closing, tight-fitting, solid core door, not less than 35 mm thick.

22.11. In a building of Type 1 or Type 2 construction, services associated with the functioning of a building and passing through a floor shall either be in individual metal pipes, metal conduits, metal ducts or the like, or be installed in shafts complying with Part 16.

22.12. (1) In a building of Type 1 or Type 2 construction, an opening in a wall providing access to a ventilating, pipe, garbage, or other service shaft shall, except as conceded in subclause (2) be protected by—

(a) a self-closing one-hour fire door; or

(b) an access panel having a fire-resistance rating of not less than one hour; or

(c) one of the devices referred to in paragraphs (a) and (b) or by a door or hopper of non-combustible construction if the shaft is a garbage shaft.

(2) An opening referred to in subclause (1) shall not be subject to that subclause if it is—

(a) located 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 one-half hour.

22.13. (1) This clause shall apply to openings in a wall, floor, or ceiling that is required to have a fire-resistance rating or a resistance to the incipient spread of fire.

(2) Individual openings for metal pipes, metal conduits, or the like, conveying—

(a) wires or cables for electrical or telephone services; or

(b) gas, including liquefied petroleum gas; or
(c) other services associated with the functioning of the building, shall be no larger than is necessary to permit of their installation and all gaps around them shall be packed or otherwise treated to the full thickness of the wall, floor, or ceiling, as the case requires, so that fire-resisting performance will not be impaired.

(3) Wires or cables for electrical, telephone, or other services that—

(a) are not enclosed in metal pipes, metal conduits, or other non-combustible material; and

(b) are installed within or pass through a wall, floor, or ceiling, shall be installed according to Part 55, including any relevant provisions of that Part for the protection of openings made for those services.

(4) Openings for ventilating or air-conditioning ducts or other equipment shall be protected as required by Specification No. 7 “Air Handling Systems” as approved by the Minister for Local Government and published in the Gazette.

(5) Openings for other services not mentioned in subclauses (2), (3), and (4) shall be protected in an approved manner.

GROUP V.—FIRE SAFETY AND FIRE RESISTANCE.

PART 23.—Separation of Sections of a Building by Fire-resisting Construction.

23.1. (1) A section of a building that is fire-separated from the remainder of the building by a fire wall in accordance with this clause shall be subject to the provisions of Group V of this Ordinance as though it were a separate building.

(2) A fire wall shall extend to the underside of the roof covering, except as provided in subclause (3).

(3) If the roof of one of the adjoining sections is lower than the roof of the other section, the fire wall—

(a) shall be carried through to the underside of the covering of the lower roof; and

(b) shall have a wall constructed on top of it which—

(i) extends to—

(A) the underside of the covering of the higher roof; or

(B) a level 6 m above the lower roof, whichever is the less; and
(ii) has a fire-resistance rating not less than that required for the fire wall; and

(iii) has any openings in it protected as follows:

(A) Doorways—approved external automatic sprinklers; or approved external automatic drenchers; or one-hour fire doors (self-closing or automatic);

(B) Windows and other glazed areas—approved external automatic sprinklers; or approved external automatic drenchers; or one-hour fire windows (automatic or permanently fixed in closed position); or one-hour automatic fire shutters;

(C) Other openings—approved external automatic sprinklers; or approved external automatic drenchers; or construction having a fire-resistance rating of not less than one hour.

(4) Notwithstanding anything to the contrary in this clause, the Council may permit an exemption from any or all of the requirements of paragraph (b) of subclause (3) if it is satisfied that, by reason of the design of the lower roof or the design or proposed use of the building housed under the lower roof, the spread of fire from the lower section to the higher section of the building would be resisted either better or as effectually.

(5) Timber purlins or other combustible material shall not pass through or cross the fire wall.

(6) The fire wall shall have the relevant fire-resistance rating prescribed by Part 16, according to the type of fire-resisting construction required for each of the adjoining sections and where these are different the greater rating shall apply.

23.2. (1) Where, in terms of Part 6, a building has portions of different Classifications, those portions shall be separated from one another by fire-resisting or fire-protective construction in accordance with this clause, except as conceded in clauses 23.3 and 23.4.

(2) If the portions of different classifications are alongside one another in the same storey, they shall be separated in that storey by a fire wall, the fire-resistance rating of which shall be determined according to paragraph (a) of subclause (1) of clause 16.15.
(3) If the portions of different classifications are situated one above the other in adjoining storeys they shall be separated as follows according to the required type of construction of the building:

(a) Type 1 and Type 2 construction—the floor between the adjoining classifications shall have a fire-resistance rating not less than that listed for a floor under Table 16.7 (if Type 1 construction is required) or Table 16.8 (if Type 2 construction is required) for the classification in the lower of the two adjoining storeys concerned.

(b) Type 3, 4 or 5 construction (applicable only if one of the adjoining classifications is either Class II or Class III)—the underside of the floor (including the sides and undersides of its floor beams, if any) shall be protected by—

(i) 12.7-mm plasterboard; or

(ii) 12.7-mm asbestos-silica board; or

(iii) 12.7-mm mesh-reinforced fibrous plaster in which the mesh is one of the 12.7-mm x 12.7-mm x 0.71-mm welded wire located not more than 6 mm from the exposed face; or

(iv) any other material not less fire-protective than 12.7-mm plasterboard, the material in each case being of fire-protective grade and fixed in accordance with the normal trade practice applicable to the fixing of the material as a fire-protective covering.

23.3. The walls or floors separating a Class IV section from the remainder of the building of which it is a part (including the case of a combined shop and dwelling) shall not be subject to clause 23.2.

23.4. It shall not be necessary to provide a fire wall between different classifications that are alongside one another in the same storey if each of the structural members throughout the storey has a fire-resistance rating as follows:

(a) Where Part 16 specifies the same rating for that member for each of the classifications concerned—the rating so specified.

(b) Where Part 16 specifies different ratings for that member for any of the classifications concerned—the highest of the ratings so specified.

23.5. (1) In a building required to be of Type 1, 2, or 3 construction, lifts connecting more than two storeys 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 relevant fire-resistance ratings prescribed by Part 16; and

(b) openings for lift landing doors and services are protected in accordance with Part 22.
(2) A stairway and lift shall not be incorporated in the one shaft if either the stairway or the lift is required to be in a fire-resisting shaft.

GROUP V.—FIRE SAFETY AND FIRE RESISTANCE.

PART 24.—Means of Egress.

Division 1—Introductory.

24.1. This Part comprises the following Divisions:

Division 1.—Introductory.
Division 2.—General Provisions.
Division 3.—Class II and III Buildings.
Division 4.—Class V, VI, VII, and VIII Buildings.
Division 5.—Class IX Buildings.

Application of Part.

24.2. Nothing in this Part shall apply to a Class I or Class X building.

Exits and paths of travel to comply with this Part.

24.3. The exits and paths of travel to exits in a building shall comply with the provisions of this Part.

Types of exits.

24.4. Exits shall comprise—

(a) internal or external stairways;
(b) ramps;
(c) fire-isolated passageways;
(d) doorways opening to a road or open space, or a combination of two or more such exits providing egress from a storey or space in the nature of a storey to a road or open space.

Division 2.—General Provisions.

Application of Division.

24.5. This Division shall apply to every building except a Class I or Class X building.

Alterations to existing buildings.

24.6. Where alterations, extensions, or additions are proposed in respect of a building, and where such alterations, extensions, or additions would adversely affect the exits or paths of travel to the exits, the Council may require that the building shall comply with this Part or such of the provisions of this Part as it considers necessary.
24.7. Doorways serving as required exits to a road doorways and other openings in the enclosing walls, if required exits or public corridors, hallways, or the like in accordance with Part 22.

24.8. Doorways from rooms, other than—

(a) sole-occupancy units occupying the whole of a storey; and

(b) sanitary compartments,
shall not open directly to a stairway, passageway, or ramp that is required to be fire-isolated.

24.9. A fire-isolated passageway shall be enclosed by walls, floors, and ceilings of non-combustible construction having a fire-resistance rating of not less than one hour.

24.10. A fire-isolated ramp may be substituted for a fire-isolated stairway if the construction enclosing the ramp complies with Part 16 for the shaft of a fire-isolated stairway.

24.11. (1) External stairways may serve as required exits in lieu of fire-isolated stairways, subject to this clause.

(2) The stairway (including connecting bridges, if any) shall be of non-combustible construction throughout.

(3) If any part of the stairway 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 non-combustible construction having a fire-resistance rating of not less than one hour; and

(b) no window or other glazed section in the enclosing walls of the stairway shall be within 6 m of any window or doorway in the external walls of the building.

(4) Subclause (3) shall not apply if—

(a) every window is more than 3 m from any part of the stairway; and

(b) the following windows and doorways are protected as follows:

(i) Windows 3 m to 6 m from stairway—one-hour automatic fire shutters, or one-hour fire windows—(automatic or permanently fixed in closed position).
(ii) Doorways less than 3 m from stairway—one-hour self-closing fire doors.

(iii) Doorways 3 m to 6 m from stairway—one-hour self-closing fire doors, or one-hour automatic fire shutters.

24.12. (1) Escalators and non-required non-fire-isolated stairways shall not connect more than—

(a) three storeys where each of those storeys is provided with an approved sprinkler system throughout; or

(b) two storeys otherwise,

and one of those storeys shall be situated at a level at which egress to a road or open space is provided.

(2) Subclause (1) shall not apply to an escalator or stairway that is—

(a) within a sole-occupancy unit in a Class II building; or

(b) an external escalator or stairway, irrespective of the classification of the building.

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

24.14. (1) Every fire-isolated stairway and fire-isolated ramp shall lead directly or by way of a fire-isolated passageway to a road or open space, except as conceded in subclause (2).

(2) In a Class V, VI, VII, or VIII building, a fire-isolated stairway or fire-isolated ramp discharging into a storey or similar space within the confines of the building shall not be subject to subclause (1) if—

(a) that storey or space is at a level at which egress to a road or open space is provided;

(b) that storey or space is unenclosed or only partly enclosed; and

(c) any walls, columns, piers, glazing or other construction at the periphery of that storey or similar space do not occupy, in total, more than one-third of its perimeter.
(3) Every fire-isolated stairway shall have a notice displayed in a conspicuous position at the landing on each storey level in or to the effect of the following:—

OFFENCES RELATING TO FIRE STAIRS.

By virtue of Ordinance No. 72 under the Local Government Act, 1919, it is an offence to—

1. Place anything in this stairway or any associated passageway leading to the exterior of the building, which may impede the free passage of persons.

2. Interfere with or cause obstruction or impediment to the normal operation of the self-closing fire doors providing access to this stairway.

3. Remove, damage, or otherwise interfere with this notice.

MAXIMUM PENALTY: $200.

(4) In any notice displayed in accordance with subclause (3) Size of this clause, the words "OFFENCES RELATING TO FIRE STAIRS" lettering and the words and figures "MAXIMUM PENALTY: $200" shall be in letters and figures not less than 7.9 mm in height and all letters and figures in the remainder of the notice shall be not less than 2.4 mm in height.

24.15. (1) Where a stairway serving as an exit is required to be fire-isolated, there shall be no direct connexion between—

(a) a flight of stairs rising from a storey below the lowest level of access to a road or open space; and

(b) a flight of stairs descending from a storey above that level.

(2) Any construction that is common to or separates rising and descending flights of stairs, as referred to in subclause (1), shall be non-combustible and have a fire-resistance rating of not less than one hour.

24.16. In a Class VI building, a non-fire-isolated required stairway or ramp shall discharge at a point not more than—

(a) 18 m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space, or
(b) 30 m from one of two such doorways or passageways where travel to each of them from the stairway or ramp is in opposite or approximately opposite directions.

24.17. (1) Gas meters shall not be installed in a required exit or in any corridor, hallway, lobby or the like leading to a required exit.

(2) Gas pipes and other fuel pipes shall not be installed in a required exit.

(3) Telephone switchboards shall not be installed in required fire-isolated stairways, fire-isolated ramps, or fire-isolated passageways.

(4) The following services and equipment shall not be installed in a required exit or in any corridor, hallway, lobby, or the like leading to a required exit unless enclosed by construction that comprises or is lined with non-combustible material or a material listed in clause 16.12:

(a) Electricity meters or ducts.

(b) Electrical motors or other motors serving equipment in the building.

24.18. An opening to any chute or duct intended for conveying the hot products of combustion shall not be located in any part of a required exit or any corridor, hallway, lobby, or the like leading to a required exit.

24.19. (1) The space below a flight of stairs of a required fire-isolated stairway, if such space is within the fire-isolated shaft, shall not be enclosed to form a cupboard or similar enclosed space.

(2) The space below a flight of stairs of a non-fire-isolated stairway (including an external stairway) serving as a required exit shall not be enclosed to form a cupboard or other enclosed space unless—

(a) the enclosing walls and ceilings have a fire-resistance rating of not less than one hour; and

(b) any access doorway to the enclosed space is fitted with a self-closing fire door having a fire-resistance rating of not less than one hour.
24.20. (1) This clause shall apply to doorways and doors—

(a) serving as required exits; or

(b) forming part of a required exit.

(2) A revolving door or roller shutter shall not be fitted to a doorway referred to in subclause (1).

(3) A sliding door shall not be fitted to a doorway referred to in subclause (1), other than one leading to a road or open space, and any such door, if power-operated, shall be so constructed that in the event of malfunction or failure of the power source, it may be opened manually under a force of not more than 110 N.

(4) A swinging door fitted to a doorway referred to in subclause (1)—

(a) shall not, at any part of its swing, encroach by more than 510 mm on the required width of a required stairway or ramp, including the landings thereof; and

(b) shall not, when fully open, encroach 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.

(5) A swinging door fitted to a doorway referred to in subclause (1) shall swing in the direction of egress except in the case of—

(a) a doorway opening to a sanitary compartment; and

(b) a doorway opening to a road, open space, or external balcony, in which case the door may swing against the direction of egress if fitted with an approved means of fixing it readily in the fully open position.

(6) The concession allowable pursuant to paragraph (b) of subclause (5) shall not apply to a doorway of a required fire-isolated stairway, fire-isolated ramp, or fire-isolated passageway.

(7) A door referred to in subclause (1) shall be readily-openable, Operation without a key and by single handed action, from the side that would face of latch. any person seeking egress from the building.
24.21. (1) The threshold of a doorway serving as a required exit or forming part of a required exit shall not, except as in subclause (2), incorporate a step or ramp at any point closer to the doorway than the width of the door leaf.

(2) A doorway opening to a road, open space, or external balcony shall not be subject to subclause (1) if the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.

24.22. Where a required exit leads to an open space that is at a different level to the public road to which it is connected, a path of travel to the road shall be provided by way of—

(a) a ramp or other incline having a grade of not more than 1 in 8 at any part; or

(b) a stairway complying with the relevant provisions of this Part.

24.23. (1) The required widths of stairways (as represented by the letter "W" in figure 24.23) shall be measured clear of all obstructions, such as handrails, projecting parts of balustrades, and the like, and shall extend without interruption, except for ceiling cornices, to a height not less than 2030 mm vertically above a line along the nosings of the treads, or the floor of the landing, as the case requires.

(2) A stairway that exceeds 2040 mm in unobstructed width shall be deemed to have a width of 2040 mm unless—

(a) it is divided into sections by a balustrade or handrail continuous between landings; and

(b) each such section is not less than 1020 mm in width,

in which case the full unobstructed width of the stairway may be counted for the purposes of this Part.
STAIRWAY REQUIREMENTS

Doors = M
into requir
510 mm

FIGURE 24.23
24.24. (1) Every stairway serving as a required exit shall be provided with landings, where necessary, to limit the number of risers in a flight of stairs to 18.

(2) The length of travel along a landing measured 510 mm from the inside edge of the landing (as represented by the letter “L” in figure 24.23) shall be not less than 760 mm.

(3) Landings shall be provided with a non-slip finish throughout or with an approved non-skid strip near the edge of the landing where it leads to a flight of stairs below.

Treads and risers.
Number in a flight.
Going and riser height.
Construction of treads.
Construction of risers.
Risers may be open.

24.25. (1) The flight of a required stairway shall have not more than 18 or less than 2 risers.

(2) The going and riser height of a flight of stairs in a required stairway shall be constant throughout that flight.

(3) The treads of a flight of stairs in a required stairway shall—
(a) be constructed within the limits of shape and size illustrated in Figure 24.25 and specified in Table 24.25; and
(b) be provided with a non-slip finish throughout or with an approved non-skid strip near the edge of the nosings.

(4) The risers of a flight of stairs in a required stairway shall be constructed within the limits of shape and size illustrated in Figure 24.25 and Table 24.25.

(5) Nothing in this clause shall be deemed to prevent the space between the treads of a stairway (referred to herein as risers) from being completely open.

### TABLE 24.25.
**LIMITS OF RISER HEIGHT AND GOING.**

<table>
<thead>
<tr>
<th>Shape of treads in plan</th>
<th>Riser height R in mm</th>
<th>Going G in mm</th>
<th>Quantity 2R + G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectangular</td>
<td>190</td>
<td>115</td>
<td>395</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wide end of tread</td>
</tr>
<tr>
<td>Tapered as in a curved stairway</td>
<td>190</td>
<td>115</td>
<td>445</td>
</tr>
</tbody>
</table>
24.26. (1) The width of a ramp serving as a required exit shall be measured clear of all obstructions, such as handrails, projecting parts of balustrades, and the like, and shall extend without interruption, except for ceiling cornices, to a height of not less than 2030 mm vertically above the floor surface of the ramp.

(2) The slope of a ramp serving as a required exit shall have a grade of not more than 1 in 8 in any part.

(3) The floor surface of a ramp shall have a non-slip finish. Surface finish.

24.27. (1) A handrail or balustrade shall be provided along the side of any required stairway or ramp, and any corridor, hallway, external access balcony, or bridge, or the like, leading to an exit, if that side is not bounded by a wall and is more than 915 mm (or 5 risers in the case of a stairway) above the finished surface of the adjoining floor or ground, as the case may be.

(2) A handrail shall be provided along at least one side of every flight of stairs in a required stairway and where the flight is 1525 mm or handrails more in width, a handrail shall be provided along each side.

(3) Required handrails shall be fixed at a vertical height of not less than 865 mm above—

(a) the nosings of stair treads; and

(b) the floor surface of ramps, landings, corridors, hallways, external access balconies, bridges and the like,

and shall be so constructed that there will be no obstruction on or above them that will tend to break a hand hold.
(4) Every required handrail shall be continuous between stair flight landings.

24.28. (1) This clause shall apply wherever this Part regulates the minimum width of required exits or doorways leading to required exits according to the number of persons accommodated in a storey.

(2) The number of persons deemed to be accommodated in a storey shall be the sum of the numbers obtained by dividing the floor area of each portion of the storey by the relevant number of square metres per person listed in Table 24.28, according to the use or proposed use of that portion.

(3) Where a particular use of portion of a storey is not listed in Table 24.28, the number of square metres per person to be used in the calculation shall be as determined by the Council.

(4) In this clause, the floor area of a storey or portion of a storey shall exclude spaces set aside for—

(a) lifts, stairs, and escalators;
(b) corridors, hallways, lobbies, and the like;
(c) service ducts and the like; and
(d) sanitary compartments or other ancillary uses.

| TABLE 24.28. |
| AREAS PER PERSON ACCORDING TO USE. |

<table>
<thead>
<tr>
<th>Type of use</th>
<th>Square metres per person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly room for—</td>
<td></td>
</tr>
<tr>
<td>(a) civic, political, transit, religious, social or recreational purposes</td>
<td>1.2</td>
</tr>
<tr>
<td>(b) entertainment or amusement</td>
<td>1.2</td>
</tr>
<tr>
<td>Bar</td>
<td>1</td>
</tr>
<tr>
<td>Boiler</td>
<td>30</td>
</tr>
<tr>
<td>Board room</td>
<td>2</td>
</tr>
<tr>
<td>Boarding-house</td>
<td>15</td>
</tr>
<tr>
<td>Cafe</td>
<td>1</td>
</tr>
<tr>
<td>Cafeteria</td>
<td>25</td>
</tr>
<tr>
<td>Computer room</td>
<td></td>
</tr>
<tr>
<td>Type of use</td>
<td>Square metres per person</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Dining room</td>
<td>1</td>
</tr>
<tr>
<td>Factory—</td>
<td></td>
</tr>
<tr>
<td>(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 steelwork or manufacture of vehicles or bulky products</td>
<td>5</td>
</tr>
<tr>
<td>(b) areas used for fabrication and processing other than those in (a)</td>
<td>50</td>
</tr>
<tr>
<td>(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</td>
<td></td>
</tr>
<tr>
<td>Garage—public</td>
<td>30</td>
</tr>
<tr>
<td>Guest-house</td>
<td>15</td>
</tr>
<tr>
<td>Hostel</td>
<td>15</td>
</tr>
<tr>
<td>Kiosk</td>
<td>1</td>
</tr>
<tr>
<td>Kitchen</td>
<td>10</td>
</tr>
<tr>
<td>Laboratory</td>
<td>10</td>
</tr>
<tr>
<td>Laundry</td>
<td>10</td>
</tr>
<tr>
<td>Library—</td>
<td></td>
</tr>
<tr>
<td>reading space</td>
<td>2</td>
</tr>
<tr>
<td>storage space</td>
<td>30</td>
</tr>
<tr>
<td>Office, including one for typewriting or document copying</td>
<td>10</td>
</tr>
<tr>
<td>Plant room for—</td>
<td></td>
</tr>
<tr>
<td>ventilation, electrical or other service units</td>
<td>30</td>
</tr>
<tr>
<td>boilers or power plant</td>
<td>50</td>
</tr>
<tr>
<td>Reading room</td>
<td>2</td>
</tr>
<tr>
<td>Restaurant</td>
<td>1</td>
</tr>
<tr>
<td>Shop-space for sale of goods—</td>
<td></td>
</tr>
<tr>
<td>(a) at a level entered direct from the open air or any lower level</td>
<td>1.5</td>
</tr>
<tr>
<td>(b) all other levels</td>
<td>3</td>
</tr>
<tr>
<td>Showroom—display area</td>
<td>5</td>
</tr>
<tr>
<td>Staff room</td>
<td>10</td>
</tr>
<tr>
<td>Storage space</td>
<td>30</td>
</tr>
<tr>
<td>Switch room</td>
<td>30</td>
</tr>
<tr>
<td>Telephone exchange—private</td>
<td>30</td>
</tr>
<tr>
<td>Transformer room</td>
<td>30</td>
</tr>
<tr>
<td>Workshop—</td>
<td></td>
</tr>
<tr>
<td>for maintenance staff</td>
<td>30</td>
</tr>
<tr>
<td>for manufacturing processes</td>
<td>As for “Factory”</td>
</tr>
</tbody>
</table>

24.29. (1) The provisions of this clause are subject to the concessions Exit signs. set out in subclause (6) in regard to Class II buildings and subclause (7) Application in regard to the entrance doors of certain sole-occupancy units.

(2) Exit signs shall be provided in the following positions: Provision at doorways of certain exits.

(a) On or near every door affording direct access—from a storey to—

(i) an enclosed stairway or ramp serving as a required exit;
(ii) an external stairway serving as a required exit; and
(iii) an external access balcony leading to a required exit.

(b) On or near every door discharging from an enclosed stairway or ramp at every level of access to a road or open space.

(3) Exit signs shall also be installed in corridors, hallways, lobbies, and the like, indicating the direction of a required exit, if the Council is of opinion that the location of the exits will not otherwise be readily apparent to persons occupying or visiting the building.

(4) A required exit sign shall—

(a) in the cases referred to in subclause (2) be installed on or near the doorway concerned in such a position as to be clearly visible to persons approaching the exit or external balcony, as the case may be;

(b) in the cases referred to in subclause (3) be installed in positions approved by the Council; and

(c) be illuminated externally or internally by an emergency lighting system or by self-luminous paint or other self-luminous material.

(5) Every sign required by this clause shall—

(a) conform with the details and dimensions of Figure 24.29 and Table 24.29; and

(b) contain only the word "EXIT", together with an arrow where necessary to indicate the direction of the exit.

(6) The foregoing provisions shall not apply to a Class-II building in which every door referred to in paragraphs (a) and (b) of subclause (2) is clearly and legibly labelled on the side remote from the exit or balcony, as the case may be, with the word "EXIT" in capital letters 25 mm high in a colour contrasting with that of their background.
(7) Notwithstanding anything to the contrary in this clause, it shall not be necessary to provide an exit sign on or near an entrance doorway of a sole-occupancy unit in a Class II, III, or IV building.

![FIGURE 24.29](image)

Colour different from colour of walls, etc., on which mounted
Capital letters in legible style; colour contrasting with background; illuminated or self-luminous, in accordance with paragraph (c) of clause 24.29 - (4)

Arrow (if required to indicate direction of exit); position on sign optional; colour contrasting with background; illuminated or self-luminous, in accordance with paragraph (c) of clause 24.29 - (4)

---

**TABLE 24.29.**

**MINIMUM DIMENSIONS.**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Minimum value permitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>100 mm</td>
</tr>
<tr>
<td>b</td>
<td>(\frac{1}{2}a)</td>
</tr>
<tr>
<td>c</td>
<td>12 mm</td>
</tr>
<tr>
<td>d</td>
<td>100 mm</td>
</tr>
<tr>
<td>e</td>
<td>(\frac{1}{2}d)</td>
</tr>
</tbody>
</table>

*Note.* Figure 24.29 and Table 24.29 do not apply to a Class II building complying with subclause (6) of Clause 24.29.
Division 3.—Class II and III Buildings.

24.30. This Division, in addition to Division 1 and Division 2, shall apply to Class II and Class III buildings, but shall not apply to any sole-occupancy unit or room therein which has its own direct access to a road or open space.

24.31. (1) In a building having a rise of not more than eight storeys, one exit only shall be required except where—

(a) the building is subject to subclause (2); or

(b) the requirements of clause 24.32 cannot be met by the provision of a single exit.

(2) In a building of Type 4 or Type 5 construction having a rise of two storeys, at least two exits shall be provided.

(3) In a building having a rise of more than eight storeys, at least two exits shall be provided.

24.32. (1) Where only one exit is required in a Class II or Class III building—

(a) the entrance doorway of a sole-occupancy unit shall be not more than 5.5 m from that exit; and

(b) no part of a room, not being a room in a sole-occupancy unit, shall be more than 15 m from that exit.

(2) Where two or more exits are required in a Class II or Class III building—

(a) the entrance doorway of a sole-occupancy unit shall be not more than 5.5 m from a point from which travel in different directions to two of those exits is available; and

(b) no part of a room, not being a room in a sole-occupancy unit, shall be more than 15 m from a point from which travel in different directions to two of those exits is available.

24.33. Where two exits are required to serve as alternative exits in relation to any room or sole-occupancy unit in a Class II or Class III building, the distance between those two exits shall be not more than 45 m, and in a Class III building the distance between the two exits shall be not less than 9 m.
24.34. (1) In this clause, the "nearest part of an exit":

(a) in the case of a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, the nearest part of the doorway providing access thereto;

(b) in the case of a non-fire-isolated internal or external stairway, the nearest part of the nearest riser;

(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 concerned; and

(d) in the case of a doorway opening to a road or open space, the nearest part of that doorway.

(2) In measuring the distances referred to in clauses 24.32 and 24.33, the following rules shall apply:

(a) In the case of a room, not being a sole-occupancy unit, the distance shall include the straight-line measurement from any part of the room to the nearest part of a doorway leading therefrom, together with the distance from such part of the doorway to the single required exit or point from which travel in different directions to two required exits is available, as the case requires.

(b) The distance from the doorway of a room or sole-occupancy unit shall, subject to paragraph (d), be measured in a straight line to the nearest part of the required single exit or point from which travel in different directions to two required exits is available, as the case requires.

(c) The distance between two required exits shall, subject to paragraph (d), be measured in a straight line between the nearest parts of those exits.

(d) Where a corridor, hallway, external balcony, or other path of travel leading to a required exit or connecting two required exits, includes a curve or change of direction, the distance shall include the shortest measurement along the corridor or other path of travel, whether by curves, or straight lines, or a combination of both.

24.35. Where two or more exits are required in a Class II or Class III building, they shall provide separate egress to a road or open space and at the level of discharge shall not be connected by any corridor, hallway, lobby, or the like (other than a fire-isolated passageway) that is common to two or more of them.
24.36. (1) In a Class II building every required stairway shall be a fire-isolated stairway, except as conceded in subclause (2).

(2) Non-fire-isolated stairways may serve as required exits in Class II buildings where—

(a) such stairways connect not more than three storeys, or not more than four storeys if at least one storey is set aside solely for the accommodation of motor vehicles or other ancillary purposes; and

(b) the provisions of clause 24.38 are met.

24.37. (1) In a Class III building every required stairway shall be a fire-isolated stairway, except as conceded in subclause (2).

(2) Non-fire-isolated stairways may serve as required exits in Class III buildings where—

(a) such stairways connect not more than two storeys, or not more than three storeys if at least one storey is set aside solely for the accommodation of motor vehicles or other ancillary purposes; and

(b) the provisions of clause 24.38 are met.

24.38. (1) The distance between the doorway of a room or sole-occupancy unit and the point of egress to a road or open space by way of any stairway that is non-fire-isolated and is required to serve that room or sole-occupancy unit shall not exceed—

(a) 30 m in a building of Type 4 or Type 5 construction; and

(b) 60 m in all other cases.

(2) For the purposes of subclause (1), the distance to a stairway shall be measured in accordance with clause 24.34, the remainder of the distance being measured—

(a) along the shortest line of travel to the road or open space; and

(b) in the case of the treads and risers of a stair, along a line connecting the nosings of the treads.
24.39. (1) In a Class II or Class III building, every doorway—
(a) serving as a required exit from a storey; or
(b) leading to or forming part of a required exit or path of travel to an exit,
shall have a clear opening of not less than 1,980 mm in height and not less than 760 mm in width.

(2) In a Class II or Class III building, every required exit and path of travel to an exit shall, except for doorways, have a minimum unobstructed vertical clearance throughout of 2,030 mm and a minimum unobstructed width throughout of 1,020 mm.

Division 4.—Class V, VI, VII, and VIII Buildings.

24.40. This Division, in addition to Division 1 and Division 2, shall apply to Class V, VI, VII, and VIII buildings and any Class IV portion thereof.

24.41. (1) In a Class V building having a rise of not more than eight storeys, one exit only shall be required except where the requirements of subclause (1) of clause 24.43 cannot be met by the provision of a single exit.

(2) In a Class V building having a rise of more than eight storeys at least two exits shall be provided.

(3) Notwithstanding the requirements of subclause (2) in a Class V building in which—
(a) the floor of the topmost storey is not more than 42 m above the floor of the lowest storey providing egress to a road or open space;
(b) an approved sprinkler system is installed throughout the building; and
(c) the requirements of subclause (1) of clause 24.43 are met,
one exit only shall be required from those storeys which are not subject to subclause (4).
Certain storeys at low level to have two exits.

(4) Where egress from a storey in a Class V building would involve a vertical rise within the building of more than 1.5 m, at least two exits shall be provided from that storey.

Number of exits required: Class VI, VII and VIII buildings.

One storey in rise.

Two storeys: upper storey not exceeding 180 m².

(2) In a Class VI, VII, or VIII building having a rise of two storeys in which the upper storey has a floor area not exceeding 180 m², one exit only shall be required except where—

(a) the requirements of clause 24.16 or subclause (1) of clause 24.43 cannot be met by the provision of a single exit; or

(b) the Council is of opinion that by reason of the design of the building, the potential fire hazards associated with the use of the building, or other relevant considerations necessitate the provision of two exits from that storey.

Two storeys: upper-storey storeys in which the upper storey has a floor area exceeding 180 m².

(3) In a Class VI, VII, or VIII building having a rise of two upper-storey storeys in which the upper storey has a floor area exceeding 180 m², at least two exits from that storey shall be provided.

More than two storeys in rise.

(4) In a Class VI, VII, or VIII building having a rise of more than two storeys at least two exits shall be provided.

Concession: building up to eight storeys.

(5) Notwithstanding the requirements of subclauses (3) and (4), in a Class VI, VII or VIII building having a rise of not more than eight storeys the Council may approve one exit only if—

(a) the requirements of subclause (1) of clause 24.43 are met; and

(b) a certificate from the Board of Fire Commissioners is submitted to the Council certifying that having regard to the proposed use of the building a single exit will be sufficient.
(6) Where egress from a storey in a Class VI, VII, or VIII building would involve a vertical rise within the building of more than 1.5 m, at least two exits shall be provided from that storey.

24.43. (1) Where only one exit is provided in a Class V, VI, VII, or VIII building, no point on a floor shall be more than 18 m from that exit, except as conceded in subclause (3).

(2) Where two or more exits are provided, no point on a floor shall be more than 18 m from—

(a) one of those exits; or

(b) a point from which travel in different directions to two of those exits is available, in which case the maximum distance to one of those exits shall not exceed 40 m.

(3) In a Class VI building, the distance to a single exit serving a storey at the level of access to a road or open space may be increased to 30 m.

(4) The entrance doorway to a Class IV portion of a 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 two exits is available.

24.44. (1) Where two exits are required to serve as alternative exits in relation to any point on the floor of a storey, the distance between those two exits shall not exceed 60 m.

(2) Where two or more exits are required to serve a storey, the minimum distance between two of them shall be not less than 6 m.
24.45. (1) In this clause, the "nearest part of a required exit" shall have the meaning ascribed to "nearest part of an exit" by subclause (1) of clause 24.34.

(2) In measuring the distances referred to in clauses 24.43 and 24.44, the following rules shall apply:

(a) In the case of a room, the distance shall include the straight-line measurement from any part of the room to the nearest part of a doorway leading therefrom, 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 two required exits is available, as the case requires.

(b) The distance from the doorway of a room, or of a Class IV portion of the building, or from a point on the floor not within a room shall, subject to paragraphs (d), (e) and (f), be 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 two required exits is available, as the case requires.

(c) The distance between two required exits shall, subject to paragraphs (d), (e), and (f), be measured in a straight line between the nearest parts of those exits.

(d) Where a corridor, hallway, external balcony, or other path of travel leading to a required exit or connecting two required exits, includes a curve or change of direction, the distance shall include the shortest measurement along the corridor or other path of travel, whether by curves, or straight lines, or a combination of both.

(e) Where more than one corridor, hallway, or other internal path of travel connects two required exits, the measurement shall be along the path of travel producing the greatest distance.

(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 in direction in proceeding to a required exit, the distance shall be measured along the line of travel past that wall or partition.
24.46. In a Class V, VI, VII, or VIII building, required stairways—

(a) may be non-fire-isolated if the building contains not more than two storeys; and

(b) shall be fire-isolated in all other cases.

24.47. (1) Every doorway—

(a) serving as a required exit from a storey; or

(b) leading to or forming part of a required exit or path of travel Generally, to an exit,

shall have a clear opening of not less than 1,980 mm in height and not less than 760 mm in width, this width to be increased, where necessary, to comply with subclause (2) or subclause (3) as the case may be.

(2) Where, pursuant to clause 24.28, a storey at the level of access to a road or open space is deemed to accommodate more than 100 persons—

(a) the width of a doorway serving as the only exit from that storey, and

(b) the sum of the widths of two or more doorways serving as required exits from that storey,

shall be not less than 760 mm plus 255 mm for every 25 persons (or part of 25 persons) in excess of 100.

(3) Where, pursuant to clause 24.49, a stairway or ramp is required to be more than 1,020 mm in width at any level, the following widths listed:

(a) A doorway providing direct access from a storey—255 mm less than the required width of the stairway or ramp at that storey level.

(b) A doorway providing direct access from the stairway or ramp at the level of access to a road or open space—255 mm less than the required width of the stairway or ramp at that level.

24.48. Every path of travel to a required exit shall, except for doorways, have a minimum unobstructed vertical clearance throughout of 2,030 mm and a minimum unobstructed width throughout of 1,020 mm.

24.49. (1) Every required exit shall, except for doorways, have a minimum unobstructed vertical clearance throughout of 2,030 mm.

(2) Every required exit shall, except for doorways, have a minimum unobstructed width throughout of 1,020 mm and this width shall be increased, if necessary, to meet the provisions of subclause (3).
(3) Where, pursuant to clause 24.28, a storey is deemed to accommodate more than 100 persons and not more than 200 persons—

(a) the width of a single stairway or ramp serving that storey (if only one such exit is required); and

(b) the sum of the widths of two or more stairways or ramps required to serve that storey,

shall, at the level of entry from that storey concerned, be not less than the relevant dimension set out in Table 24.49, according to the number of persons deemed to be accommodated in that storey, and where the number of persons deemed to be accommodated exceeds 200, the relevant width shall be 2 040 mm plus 255 mm for every 25 persons (or part of 25 persons) in excess of 200.

(4) The required width of a required stairway or ramp shall not diminish in the direction of travel to a road or open space.

**TABLE 24.49.**

<table>
<thead>
<tr>
<th>Number of persons accommodated according to clause 24.28</th>
<th>Aggregate width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exceeding</td>
<td>Not exceeding</td>
</tr>
<tr>
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<td>100</td>
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</tr>
<tr>
<td>175</td>
<td>175</td>
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<tr>
<td>200</td>
<td>200</td>
</tr>
</tbody>
</table>

**Division 5.—Class IX Buildings.**

24.50. This Division, in addition to Division 1 and Division 2, shall apply to Class IX buildings.

24.51. The means of egress from a Class IXa building or from a school shall be as determined by the Council after consideration of—

(a) a report by the Board of Fire Commissioners as to the suitability or otherwise of the means of egress proposed; and

(b) any conditions regarding such means of egress that may be recommended by that Board.
24.52. (1) This clause shall apply to Class IXb buildings except—

(a) schools; and

(b) buildings that are subject to the Theatres and Public Halls Act, 1908.

(2) Any room situated in the second or higher storey which—

(a) is designed, intended or adapted to be used as an assembly room for—

(i) civil, political, transit, religious, social or recreational purposes; or

(ii) entertainment or amusement, and

(b) has a floor area of 42 m² or more,

shall be provided with two egress doorways.

(3) If the room referred to in subclause (2) is situated in the third or higher storey, that storey shall be served by two fire-isolated stairways.

(4) The doorways referred to in subclause (2) shall have a width of minimum aggregate width calculated in the proportion of 510 mm for every doorways 55 m² of floor area in the room and no doorway shall be less than 1 020 mm in width.

(5) Every path of travel from a room referred to in subclause (2) Dimensions to a required stairway shall except for doorways have a minimum of paths unobstructed vertical clearance throughout of 2 040 mm and a minimum unobstructed width throughout of 1 020 mm.

(6) Every required stairway shall have a minimum unobstructed Minimum width throughout of 1 020 mm and this width shall be increased, where necessary, to meet the provisions of subclause (7).

(7) Where, pursuant to clause 24.28, a storey containing a room referred to in subclause (2) is deemed to accommodate—

(a) more than 100 persons and not more than 200 persons, the aggregate width of the required stairway shall, at the level of entry from that storey, be not less than the relevant dimension set out in Table 24.52 according to the number of persons deemed to be accommodated in that storey;

(b) more than 200 persons, the aggregate width of the required stairways shall, at the level of entry from that storey, be 2 040 mm plus 255 mm for every 25 persons (or part of 25 persons) in excess of 200.

(8) All doors fitted to egress doorways in a room referred to in Doors. subclause (2) shall, except where otherwise approved, be hung in two folds fitted with “panic” bolts, and be made to open outwards. A door shall not open immediately upon a flight of stairs, but a landing shall be provided between such stairs and such doorway.
TABLE 24.52.
WIDTH OF STAIRWAYS ACCORDING TO NUMBER OF PERSONS ACCOMMODATED IN A STOREY.

<table>
<thead>
<tr>
<th>Number of persons accommodated according to clause 24.28</th>
<th>Aggregate width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exceeding</td>
<td>Not exceeding</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
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</table>

GROUP V.—FIRE SAFETY AND FIRE RESISTANCE.

PART 25.—Chimneys, Flues, Fireplaces, Stoves and Similar Features.

Application of Part.

25.1. Every chimney, flue, fireplace, stove, heating appliance, and similar feature that is situated within or forms part of a building of any of the Classes I to X inclusive shall comply with such of the provisions of this Part as are applicable thereto.

25.2. * * * * *

Domestic-type oil-heaters.

25.3. A domestic-type oil-heating appliance shall be provided with a flue and the appliance, together with its flue and other associated fittings, shall be installed in accordance with Australian Standard CB 21, “S.A.A. Oil Heating Appliances Installation Code”.

Domestic-type solid-fuel appliances.

25.4. 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 Australian Standard CB 21, “S.A.A. Oil Heating Appliances Installation Code”, as though it were an oil-heating appliance, subject to the following conditions:

(a) The minimum distances between the appliance and any nearby combustible material shall be as specified in Appendix A of that Standard.

(b) Where the case temperature of the appliance is not known it shall, for the purposes of Appendix A of that Standard, be deemed to have a case temperature exceeding 149°C.
(c) The minimum distances between the appliance and any nearby combustible material may be reduced below the distance specified in such Appendix under the same conditions as those specified for an oil heating appliance by Rule 3.2.1.2 or Rule 3.4.1.2 of that Standard, whichever is appropriate.

(d) The flue shall be constructed of asbestos cement not less than 9.5 mm thick, cast iron or other approved material.

25.5. A boiler to which Part 1 of Australian Standard CB 1 "S.A.A. Boilers, Boiler Code" applies shall be provided with a flue, and the boiler, together with its flue, shall be installed in accordance with the relevant provisions of that Standard.

25.6. (1) Every open fireplace, and every solid-fuel-burning appliance Hearths, in which the fuel-burning compartment is not enclosed, shall be provided with a hearth. When to be with a hearth.

(2) A required hearth shall be of stone, concrete, masonry or other similar non-combustible material and be so constructed that——

(a) its upper surface does not slope away from the grate or appliance; and

(b) combustible material situated below the hearth shall not be nearer than 155 mm from the upper surface of the hearth, but this requirement shall not apply to combustible material below that portion of the hearth which is required to extend beyond the appliance, fireplace opening, or the limits of the fireplace, as the case requires.

(3) A required hearth——

(a) shall extend not less than 300 mm beyond the front of the fireplace opening and not less than 150 mm beyond each side of that opening unless, by reason of the design of the fireplace or appliance, the Council approves a variation of this requirement; and

(b) where the fireplace or appliance is free-standing from any wall of the room, shall extend beyond the limits of the fireplace or appliance for a distance of not less than 300 mm unless, by reason of the design of the fireplace or appliance, the Council approves a variation of this requirement.

25.7. (1) A flue shall not be used to convey the hot products of combustion from more than one appliance or fireplace except in the case of——

(a) gas-burning appliances where the relevant requirements referred to in clause 25.2 permit otherwise; or

(b) boilers referred to in clause 25.5 where Australian Standard CB 1 "S.A.A. Boiler Code" permits otherwise; or
(c) solid fuel or electrical appliances used in the cooking and preparation of food; or

(d) electrical disposal appliances such as incinerettes.

(2) A flue or chimney shall not terminate in such a position as to constitute—

(a) a risk of fire to nearby combustible materials; or

(b) a risk of penetration of flue gases through nearby windows or other openings, fresh air inlets, mechanical ventilation inlets or exhausts, or the like.

(3) Where a chimney contains more than one flue, each flue shall extend to the chimney outlet.

(4) A chimney or flue shall be so constructed that—

(a) it is capable of withstanding the temperatures likely to be generated by the appliance or appliances to which it is connected;

(b) the temperature of the exposed faces will not exceed a level that would cause damage to nearby parts of the building; and

(c) the hot products of combustion will not escape through the walls of the chimney or flue.

(5) A flue attached to an appliance referred to in clauses 25.2, 25.3, 25.4 or 25.5 and constructed according to the requirements or Standard to which it is subject pursuant to the clause concerned shall be deemed to comply with subclause (4).

(6) In a Class I or Class X building an open fireplace and a chimney connected thereto that are constructed according to the following rules shall be deemed to comply with subclause (4):

(a) Up to the level of 300 mm above the underside of the arch or lintel the walls forming the sides and back of the fireplace shall be constructed in two separate sections of solid masonry having a total thickness, exclusive of any cavity, of not less than 190 mm.

(b) Concrete masonry shall not be used in the construction of the inner section of the masonry referred to in paragraph (a).

(c) The walls of the fireplace and chimney above the level referred to in paragraph (a) shall be constructed of masonry units having a net volume, exclusive of cored and similar holes, of not less than 75 per centum of their gross volume, measured on the overall rectangular shape of the units, and having an actual thickness of not less than 90 mm.

(d) The chimney shall have its flue lined internally to a thickness of not less than 12 mm with rendering consisting of cement, lime, and sand in the proportions of 1 part cement, 3 parts lime, and 10 parts sand by volume, or other approved material.