(b) the building is of Type 2 or Type 3 construction and
complies with the following requirements:

(i) The space below the roof shall be divided into
compartments in accordance with clause 19.6;

(ii) The building shall be provided with approved
automatic smoke-and-heat vents in accordance
with clause 19.7;

(iii) Every external wall facing the boundary of an
adjoining allotment of land shall be provided
with a parapet in accordance with clause 19.8,
except where the provisions of that clause permit
the height of the parapet to be reduced to nil;

(iv) Windows and other openings in every external
wall facing the boundary of an adjoining allot-
ment of land shall be so limited in area as to
comply with clause 19.9; and

(v) An approved sprinkler system shall be installed
throughout the building.

(2) In determining whether subclause (1) is applicable,
all Class VI, VII or VIII buildings on the one allotment of land
that are within 27 m of each other shall be deemed to be the one
building, except in a case where—

(a) the external walls facing each other in the buildings
concerned—

(i) have a fire-resistance rating of not less than 2
hours; and

(ii) are non-combustible; and

(b) each such wall complies with clause 19.8 and clause 19.9
as though the buildings were on different allotments,
with an imaginary boundary line in a position nominated
by the person on whose behalf the building is being
erected.
19.5. An open space required by this Part to be provided on or associated with the site of a building—

(a) shall, except as conceded in paragraph (c), be contiguous with or straddle all the boundaries of the site, as the case requires, and shall include any road, river, public reserve or public place adjoining the site, but not the farthest 6 m thereof;

(b) shall not include any part of an adjoining allotment of land not being a road, river, public reserve or public place;

(c) shall not in any part be built upon, or designed for the storage or processing of materials, or any like purpose, except that guard houses and service buildings (such as substations and pump houses) may encroach upon the width of the space if the Council (after consultation with the Board of Fire Commissioners) is satisfied that the encroachment—

(i) should not unduly impede fire fighting at any part of the perimeter of the site; and

(ii) should not unduly add to the risk of spread of fire to an adjoining allotment of land.

19.6. In a building required to have the space below the roof divided into compartments, the following requirements shall be met:

(a) The compartments shall be formed by—

(i) vertical, non-combustible, non-shattering, draught curtains (including asbestos-silica board and excluding asbestos-cement board) hung from the roof structure; or

(ii) the use of a saw-tooth roof in which the vertical part of the “saw-tooth” comprise non-combustible, non-shattering material, or wired glass not less than 6 mm thick;
(b) The foregoing curtains or vertical part of the “saw-tooth” shall extend from the roof sheeting to a level not less than 1.5 m below the lowest part of the opening, to the outside air, of the lowest required smoke-and-heat vent.

(c) The holes through which any non-metallic curtains are fixed shall be not less than 10 mm in diameter oversize, and shall be so located as to allow expansion of the curtains in the event of fire within the building.

(d) None of the compartments so formed shall exceed 1 000 m² in area, measured in a horizontal plane.

(e) In spaces of abnormal fire hazard specified in the Second Schedule—

   (i) the horizontal distances between the foregoing curtains or vertical part of the “saw-tooth”; and

   (ii) the horizontal distance between any external wall and the curtain or glazing, if any, nearest to it, shall not exceed 30 m.

(f) A ceiling or like construction shall not be used in or below any such compartment.

19.7. (1) * * * * * *

(2) In a building required to have approved automatic smoke-and-heat vents, the following requirements shall be met:

(a) Each of the compartments below the roof and separated by the curtains or vertical part of the “saw-tooth” described in clause 19.6 shall have one or more approved automatic smoke-and-heat vents.
(b) The automatic opening of the vents, if a sprinkler system is installed, shall be set for a temperature not less than 5° on the Celsius scale above that at which the sprinkler system is set to operate.

(c) The aggregate airway of vent openings in each compartment shall bear not less than the following ratio to the area of the compartment:

(i) Where the space vertically below the compartment is or includes a space of abnormal fire hazard specified in the Second Schedule ........................................... 3:100;

(ii) In all other cases ........................................... 3:200.

19.8. **(1)** A parapet required by this Part to be provided on an external wall shall, subject to subclause (2), have a height not less than set out in the second column of Table 19.9, according to—

(a) the distance of the wall from the boundary of the adjoining allotment of land it faces; and

(b) the aggregate area of windows and other openings to be used below the parapet.

**(2)** The height of parapet required by Table 19.9 may be reduced by an amount equal to one-third the distance to which a concrete or other non-combustible roof extends into the building from the external wall concerned if—

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

(b) the supports of that part of the roof concerned are non-combustible and have a fire-resistance rating of not less than one hour.
19.9. In an external wall in which the windows and other openings are required by this Part to be limited in area, their aggregate area shall not exceed the maximum permissible aggregate area of windows and other openings stated in Table 19.9, according to the distance of the wall from the boundary of the adjoining allotment of land it faces.

<table>
<thead>
<tr>
<th>Distance of wall from boundary (metres)</th>
<th>Height of parapet (metres)</th>
<th>Maximum permissible aggregate area of openings (square metres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1.5</td>
<td>1.5</td>
<td>Nil, 0.5 in any 2-m length of wall.</td>
</tr>
<tr>
<td>1.5 to less than 2</td>
<td>1</td>
<td>Nil, 1 in any 2-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.25</td>
<td>1 in any 2-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>Nil.</td>
</tr>
<tr>
<td>2 to less than 3</td>
<td>0.75</td>
<td>0.5 in any 3-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1 in any 3-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.25</td>
<td>2 in any 3-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>Nil.</td>
</tr>
<tr>
<td>3 to less than 4.5</td>
<td>0.5</td>
<td>1 in any 4-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>0.75</td>
<td>2 in any 4-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>3 in any 4-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.25</td>
<td>4 in any 4-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>Nil.</td>
</tr>
<tr>
<td>4.5 to less than 6</td>
<td>Nil</td>
<td>0.25 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.5 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.75 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.25 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.5 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.5 in any 5-m length of wall.</td>
</tr>
<tr>
<td>6 to less than 7.5</td>
<td>Nil</td>
<td>4 in any 7-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.25 in any 7-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 in any 7-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 in any 7-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 in any 7-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.75 in any 7-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9 in any 7-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 in any 7-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10.5 in any 7-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.25 in any 7-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12.5 in any 7-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.5 in any 7-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14 in any 7-m length of wall.</td>
</tr>
<tr>
<td>7.5 to less than 9</td>
<td>Nil</td>
<td>9 in any 9-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11.5 in any 9-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 in any 9-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.25 in any 9-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13.5 in any 9-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 in any 9-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16 in any 9-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.75 in any 9-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18.5 in any 9-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 in any 11-m length of wall.</td>
</tr>
<tr>
<td>9 to less than 10.5</td>
<td>Nil</td>
<td>17 in any 11-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19.5 in any 11-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.25 in any 11-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22.5 in any 11-m length of wall.</td>
</tr>
<tr>
<td>10.5 to less than 13.5</td>
<td>Nil</td>
<td>30.5 in any 15-m length of wall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 in any 15-m length of wall.</td>
</tr>
<tr>
<td>13.5 to less than 18</td>
<td>Nil</td>
<td>45.5 in any 18-m length of wall.</td>
</tr>
<tr>
<td>18 and over</td>
<td>Nil</td>
<td>No limitation.</td>
</tr>
</tbody>
</table>
19.10. (1) A Class VII building (erected before or after the commencement of this Ordinance) that is not or at any time ceases to be used for the storage or display of—

(a) goods referred to in the Second Schedule; or

(b) combustible goods of any kind,

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

(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 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) The Council may exempt a Class V, VI, VII or VIII building from any or all of the requirements of this Part upon production of a certificate issued by the Board of Fire 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 any or all of the provisions of this Part, and additional to those prescribed in 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.

(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.

(4) Nothing in this clause shall be construed as giving exemption from the provisions of clause 1.6.

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) An applicant for approval to erect a building to which this clause applies shall furnish to the Council a report obtained by him from the Board of Fire Commissioners of New South Wales as to any special provisions which the Board thinks should be made to restrict or combat the spread of fire.
(3) The Council shall, after considering any recommendation contained in a report received by it under subclause (2), impose such special requirements for restricting or combating the spread of fire as it may consider desirable.

(4) Any special requirement imposed pursuant to sub-clause (3) shall—

(a) be imposed only by resolution of the Council in respect of the building concerned;

(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 requirements of this Part, except that exemptions may be granted from one or more of those requirements where the Board of Fire Commissioners of New South Wales 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 clause 20.1 (b) shall be an official report issued by one of the following testing authorities:

(a) Commonwealth Experimental Building Station, Commonwealth Department of Housing and Construction;

(b) Fire Research Station, Building Research Establishment, Department of the Environment, Great Britain;

(c) Fire Insurers' Research and Testing Organisation, Great Britain;

(d) National Bureau of Standards, United States of America;

(e) Underwriters' Laboratories Incorporated, United States of America;

(f) National Research Council, Canada;

(g) Underwriters' Laboratories of Canada;

(h) Building Research Association of New Zealand;

(i) A laboratory approved for that particular test by—

   (i) the National Association of Testing Authorities, Australia;

   (ii) the Department of the Environment of Great Britain; or

   (iii) the Testing Laboratory Registration Council of New Zealand.
(2) The report shall fully describe the conditions of test, and the form of construction of the tested prototype.

(3) Where a report issued pursuant to subclause (1) indicates that the tested prototype was subjected to restraints applied by direct compression, 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 referred to in clause 20.1 is a floor, roof, or beam of steel or reinforced concrete (other than prestressed concrete), it may be of longer or shorter span than that of the prototype if evidence is produced to satisfy 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.
Ordinance No. 70—Local Government Act, 1919.

(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.

(2) The evidence referred to in subclause (1) shall be in the form of a report and calculations prepared by a practising structural engineer.
20.4. A steel column, being a structural member referred to in clause 20.1, 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, Australia, certifying in the form authorised by that Association 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.

* * * * *

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.
Ordinance No. 70—Local Government Act, 1919.

(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 for walls has a thickness exceeding 19 mm the plaster shall be reinforced with—

(a) expanded metal lath complying with subclause (8); or
(b) 13-mm × 13-mm × 0.710-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.

Column coverings.

Protection against injury generally.

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.
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 1480 "SAA Concrete Structures 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 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 1481 "SAA Prestressed Concrete Code" (according, where relevant, to the loads to be supported by the member); and
Ordinance No. 70—Local Government Act, 1919.

(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—

(a) the relevant construction has not achieved the particular fire-resistance rating concerned; or

(b) 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>½ hr</td>
</tr>
<tr>
<td>Loadbearing walls whether internal or external, and common and party walls whether loadbearing or non-loadbearing.</td>
<td>Solid walls and cavity walls, excluding the width of the cavity—Ashlar stone masonry</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solid pressed clay bricks</td>
<td>110</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></td>
<td>Concrete—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—Ashlar stone masonry</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extruded, cored or lattice clay bricks—Unplastered</td>
<td>100</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>Plastered 19 mm thick on both sides</td>
<td></td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>Solid pressed clay and calcium-silicate bricks—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—230-mm cavity wall—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—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—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>
<tr>
<td></td>
<td>Hollow blocks of concrete with—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>Terra-cotta—Plastered 19 mm thick one side</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plastered 19 mm thick on both sides</td>
<td>100</td>
<td>150</td>
</tr>
<tr>
<td>Steel columns (including fabricated columns).</td>
<td>Solid gypsum blocks</td>
<td>75</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>Gypsum-perlite or gypsum-vermiculite plaster on metal lath and channels</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—Solid clay bricks with Column spaces filled</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Column spaces not filled</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>
TABLE 20.10—continued.
FIRE-RESISTANCE RATINGS DEEMED TO APPLY TO CERTAIN STRUCTURAL MEMBERS
—continued.

<table>
<thead>
<tr>
<th>Structural member</th>
<th>Construction of member</th>
<th>Col. 3</th>
<th>Col. 4</th>
<th>Col. 5</th>
<th>Col. 6</th>
<th>Col. 7</th>
<th>Column 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel columns (including fabricated columns)—continued.</td>
<td>Solid concrete blocks with— Column spaces filled 50 50 50 63 88 11, 12</td>
<td>1 hr</td>
<td>1½ hr</td>
<td>2 hr</td>
<td>3 hr</td>
<td>4 hr</td>
<td>Annexure reference—clause number 11, 12</td>
</tr>
<tr>
<td></td>
<td>Column spaces not filled 50 50 63</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gypsum blocks laid in gypsum-sand mortar with— Column spaces filled</td>
<td>50 63 88 11, 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Column spaces not filled</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hollow terra-cotta blocks plastered 13 mm thick with Column spaces filled</td>
<td>50 63 88</td>
<td>9, 11, 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Column spaces not filled</td>
<td>50</td>
<td>9, 11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structural concrete cast in situ around mesh or binding, and not load-bearing As above, plastered 13 mm thick</td>
<td>25 32 38 51 63</td>
<td>11, 12, 13</td>
<td></td>
<td></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 Structural concrete cast in situ around mesh or binding and designed to be load-bearing and incorporating— Category B or C aggregate</td>
<td>25 32 38 57 76 8, 11, 12, 13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Category A aggregate</td>
<td>25 32 38 51 63 8, 11, 12, 13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gypsum cast in situ</td>
<td>25</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gypsum-perlite or gypsum-vermiculite plaster— Sprayed on metal lath</td>
<td>19 22 25 35 44 14, 15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sprayed to contour</td>
<td>22 25 35 48 57 18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<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— Solid clay bricks with— Column spaces filled</td>
<td>50 50 50 63 75 11, 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Column spaces not filled</td>
<td>50 50 63</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solid concrete blocks with— Column spaces filled</td>
<td>50 50 63 75 100 11, 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Column spaces not filled</td>
<td>50 50 63</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<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— Gypsum blocks laid in gypsum-sand mortar with— Column spaces filled</td>
<td>50 75 100 11, 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Column spaces not filled</td>
<td>50</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hollow terra-cotta blocks plastered 13 mm thick with Column spaces filled</td>
<td>50 75 100</td>
<td>9, 11, 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Column spaces not filled</td>
<td>50</td>
<td>9, 11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structural concrete cast in situ around mesh or binding and not subjected to any applied loading</td>
<td>25 32 38 51 63 11, 12, 13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 20.10—continued.

**Fire-Resistance Ratings Deemed to Apply to Certain Structural Members**  
—continued.

<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>Col. 3</td>
<td>Col. 4</td>
</tr>
<tr>
<td>Steel columns (including fabricated columns)—continued.</td>
<td>As above, plastered 13 mm thick</td>
<td>25</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Structural concrete cast in-situ around mesh or binding and designed to be loadbearing and incorporating—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Category B or C aggregate</td>
<td>25</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Category A aggregate</td>
<td>25</td>
<td>32</td>
</tr>
<tr>
<td></td>
<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>
</tr>
<tr>
<td></td>
<td>Gypsum cast in-situ</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gypsum-perlite or gypsum-vermiculite plaster—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sprayed on metal lath</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Sprayed to contour</td>
<td>25</td>
<td>32</td>
</tr>
<tr>
<td>Concrete columns.</td>
<td>Columns of—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reinforced concrete</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prestressed concrete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel beams (including open-webbed joints, girders, trusses, and the like).</td>
<td>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>
</tr>
<tr>
<td></td>
<td>Structural concrete encaissement incorporating—</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>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Gypsum-perlite or gypsum-vermiculite plaster—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sprayed on metal lath</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Sprayed to contour</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td></td>
<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>
</tr>
<tr>
<td></td>
<td>Structural concrete encaissement incorporating—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Category B or C aggregate</td>
<td>25</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Category A aggregate</td>
<td>25</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Gypsum-perlite or gypsum-vermiculite plaster—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sprayed on metal lath</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Sprayed to contour</td>
<td>25</td>
<td>32</td>
</tr>
<tr>
<td>Floors, roofs, and ceilings.</td>
<td>Concrete</td>
<td>Reinforced</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prestressed</td>
<td></td>
</tr>
</tbody>
</table>

Refer to subclause (1) of clause 20.10.

Refer to subclause (2) of clause 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, granodiorite, quartz dacite, quartz diorite, quartz porphyrite, or quartz porphyry; or
   
   (b) conglomerate, quartzite, or sandstone; or
   
   (c) chert or flint; or
   
   (d) limestone or marble.

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 4-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:

<table>
<thead>
<tr>
<th>Type of aggregate used in manufacture of blocks (See clause 8)</th>
<th>Type of plaster and its location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cement and sand, or cement, lime and sand on one face only</td>
</tr>
<tr>
<td>Category A aggregate.</td>
<td>No concession shall be made.</td>
</tr>
<tr>
<td>Category B aggregate.</td>
<td>No concession shall be made.</td>
</tr>
<tr>
<td>Category C aggregate.</td>
<td>No concession shall be made.</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 material 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 1465 "Dense Natural Aggregates".

(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.
Ordinance No. 70—Local Government Act, 1919.

(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 thickness; or

(b) 40 per cent of the gross volume of the block in a block of 100-mm thickness; or

(c) 50 per cent of the gross volume of the block in a block of 150-mm thickness.

(2) ........................................

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 (including Fabricated Steel Columns)

(1) Where the principal fire-protective construction of a steel column (including any fabricated steel 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 terracotta 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 terracotta blocks shall be similarly reinforced in every horizontal joint.

12. Re-entrant and Like Parts of Certain Steel Columns (including Fabricated Steel Columns). Where steel columns (including fabricated steel columns) are required to have a 3-hour or a 4-hour fire-resistance rating, re-entrant 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 3.15 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 5 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, Girders, Trusses and the Like.** Where the principal fire-protective material of a steel open-webbed joist, girders, trusses or the like 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 3.15 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 5 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 an open-webbed joist, girder, truss or the like, 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 Plaster, or Gypsum-vermiculite Plaster as Protection for Steel Open-webbed Joists, Girders, Trusses and the Like. Where the protection is applied to a steel open-webbed joist, girder, truss or the like 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. Gypsum-perlite Plaster or Gypsum-vermiculite Plaster Sprayed to Contour.

(1) The plaster shall be integrally reinforced as follows:

(a) Reinforcement shall be used when a surface of a structural member, or of any part of a structural member, to be protected falls within the limits of Table 20.10 (18).

(b) Reinforcement shall be in—

(i) expanded metal lath complying with clause 20.8 (8); or

(ii) 13 mm x 13 mm x 0.710 mm galvanised steel wire mesh,

the reinforcement being placed at a distance from the surface of the plaster of not less than one-third, and not more than two-thirds, of the thickness of the plaster.

(c) Reinforcement shall be permanently fixed in accordance with the relevant requirements of Table 20.10 (18).

(2) For the purposes of Table 20.10 (18)—

(a) a surface is a vertical surface if the plane of the surface is at an angle to the horizontal plane of more than 80 degrees, and includes a surface so depicted in Diagram 20.10 (18);
Ordinance No. 70—Local Government Act, 1919.

(b) a surface is a non-vertical surface if—

(i) the plane of the surface is at an angle to the horizontal plane of more than 10 degrees and not more than 80 degrees; and

(ii) the surface does not face downwards,

and includes a surface so depicted in Diagram 20.10 (18);

(c) a surface is an underside if—

(i) the plane of the surface is at an angle to the horizontal plane of not more than 80 degrees; and

(ii) the surface faces downwards,

and includes a surface so depicted in Diagram 20.10 (18); and

(d) a surface is an upperside if—

(i) the plane of the surface is at an angle to the horizontal plane of not more than 10 degrees; and

(ii) the surface does not face downwards.

TABLE 20.10 (18).

LOCATION OF REINFORCEMENT AND ITS FIXING.

<table>
<thead>
<tr>
<th>Surface to be protected</th>
<th>Reinforcement required if width of surface exceeds—(mm)</th>
<th>Spacing for fixing of reinforcement (mm centres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>'H' or 'I' section shapes—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical</td>
<td>450</td>
<td>450</td>
</tr>
<tr>
<td>Non-Vertical</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Underside</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Upperside</td>
<td>Not Required</td>
<td>Not Required</td>
</tr>
<tr>
<td>Other shapes—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical</td>
<td>Any size</td>
<td>450</td>
</tr>
<tr>
<td>Non-Vertical</td>
<td>Any size</td>
<td>300</td>
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<tr>
<td>Underside</td>
<td>Any size</td>
<td>300</td>
</tr>
<tr>
<td>Upperside</td>
<td>Not Required</td>
<td>Not Required</td>
</tr>
</tbody>
</table>

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19. Limitation or 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 Part 1 of Australian Standard 1905 "SAA 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 140ø C, except in any glazed part thereof.

21.2. Notwithstanding the provisions of Part 1 of Australian Standard 1905 "SAA 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 $64.6 \times 10^3$ mm$^2$ in any other case.

21.3. Every required smoke door shall—

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

(b) be side-hung;
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(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
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(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 that complies with the provisions of Part 2 of Australian Standard 1905 “SAA Fire Door Code”.

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 Application. 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 part of the wall, such as a panel-filled part, that does not have the relevant fire-resistance rating specified by Part 16 for the structural parts 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 Approval clause, the 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
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(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
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(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 half that required by 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.
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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 1735 “SAA 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 walls of a fire-isolated lift shaft shall, if they exceed $32.5 \times 10^2$ mm² 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) In a Class II or Class III building, 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 portion 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. (1) 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.

(2) Notwithstanding subclause (1), in a building of Type 1 or Type 2 construction, plumbing services associated with the functioning of the building and passing through a floor may be in polyvinyl chloride pipes and fittings if—

(a) the building contains not more than 2 storeys and complies with the provisions of Part 19; or

(b) the floors passed through are those between sanitary compartments which—

(i) are separated from other portions of the building as though they were ventilating, pipe, garbage, or like shafts, not intended for the discharge of hot products of combustion; and

(ii) have all doorways opening therefrom protected by self-closing one-hour fire doors.
and if the opening for those polyvinyl chloride pipes and fittings comply with the provisions of clause 22.13 relating to openings for metal pipes, metal conduits, or the like.

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) Except as provided by subclause (5), openings for ventilating or air-conditioning ducts or other equipment shall—

(a) where forming part of an air-handling system referred to in Rule 1.3 (a) of Australian Standard 1668 “SAA Mechanical Ventilation and Air Conditioning Code”; or

(b) where not forming part of an air-handling system referred to in paragraph (a), but where made in a wall required to have a fire-resistance rating to resist the lateral spread of fire,

be protected by fire dampers complying with Australian Standard 1682 “Fire Dampers”.

(5) Fire dampers—

(a) are not required to be fitted to an opening referred to in subclause (4) if the opening is of a kind referred to in Rule 4.1.4 of Part 1 of Australian Standard 1668 “SAA Mechanical Ventilation and Air Conditioning Code”; and

(b) shall not be fitted to an opening referred to in subclause (4) if the opening is of a kind referred to in Rule 4.1.5 of Part 1 of Australian Standard 1668 “SAA Mechanical Ventilation and Air Conditioning Code”.

Wiring not in pipes, etc.

Wall openings for air-handling systems.

Fire dampers—where not required or prohibited.
Air ducts which pass through one or more floors required to have a fire-resistance rating shall be enclosed in a shaft which—

(a) has the fire-resistance rating required for a ventilating shaft by Part 16; and

(b) is enclosed at the top and bottom with construction having the same fire-resistance rating as that required for the walls of the shaft, except that the enclosure at the top of the shaft may be omitted where the top of the shaft opens outside the building in which the duct is installed or constructed.

(7) Openings for other services not mentioned in subclauses (2), (3), (4) or (6) shall be protected in an approved manner.

Group V.—Fire Safety and Fire-Resistance.

Part 23.—Separation of a Building into Sections 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 accord-
ance with this clause, except as conceded in clause 23.4.

(2) If the portions of different classifications are along-
side 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 portions 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 portions is of Class II, III or IV)—the
underside of the floor (including the sides and under-
sides of its floor beams, if any) shall be protected by—

(i) 13-mm plasterboard; or

(ii) 12-mm asbestos-silica board; or

(iii) 12-mm mesh-reinforced fibrous plaster in which
the mesh is one of 13-mm x 13-mm x 0.710-mm
welded wire located not more than 6 mm from
the exposed face; or

(iv) any other material not less fire-protective than
13-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.
23.4. It shall not be necessary to provide a fire wall between portions having 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 5.—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.
Ordinance No. 70—Local Government Act, 1919.

Division 3.—Class II and III Buildings.
Division 4.—Class IV, V, VI, VII, and VIII Buildings.
Division 5.—Class IX Buildings.

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

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

24.4. * * * *

Division 2.—General Provisions.

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

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 or open space, and doorways and other openings in the enclosing walls, floors and ceilings of required exits or public corridors, hallways, or the like, shall be protected 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 part 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.
Ordinance No. 70—Local Government Act, 1919.

(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
Ordinance No. 70—Local Government Act, 1919.

(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 sub-clause (3) of this clause, the words “OFFENCES RELATING TO FIRE STAIRS” 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).
Ordinance No. 70—Local Government Act, 1919.

Sliding doors.

(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.

Swinging doors:

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

Encroachment.

(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.

Direction of swing.

(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.

Swing of doors of fire-isolated stairways, etc.

(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.

Operation of latch.

(7) A door referred to in subclause (1) shall be readily openable, without a key and by a single handed action, from the side that would face 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 2 030 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 2 040 mm in unobstructed width shall be deemed to have a width of 2 040 mm unless—

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

(b) each such division is not less than 1 020 mm in width, in which case the full unobstructed width of the stairway may be counted for the purposes of this Part.