(d) For a floor beam wherever more than half its cross-section is less than 3 m from an edge of a floor ................. 2 hours.

(e) For a floor beam otherwise .............. 1 hour.

(f) For a floor .................................. 1 hour.

(8) In a Class II, III or IX building having a rise of not more than six storeys, the roof need not comply with subclause (1) if—

(a) the roof covering is non-combustible; and

(b) the ceiling immediately below the roof has a resistance to the incipient spread of fire to the roof space of one hour, as determined in the Standard Fire Test.

(9) In a Class V, VI, VII or VIII building having a rise of not more than six storeys, the roof need not comply with subclause (1) but if the building has a rise of more than three storeys—

(a) the roof covering shall be non-combustible; and

(b) the ceiling immediately below the roof shall have a resistance to the incipient spread of fire to the roof space of one hour, as determined in the Standard Fire Test.

(10) That section of Table 16.7 specifying fire-resistance ratings according to effective distance extends also to those parts of an internal column that—

(a) face and are within 1.5 m of a window; and

(b) are exposed (in terms of clause 16.6) through that window to a fire-source feature.

(11) Every internal wall (including a partition wall) required by Table 16.7 to have a fire-resistance rating—

(a) shall extend to

(i) the underside of the floor, if any, next above; or

(ii) the underside of a roof complying with subclause (1); or

(iii) the roof covering of any other roof; or
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(iv) a ceiling immediately below the roof and having a resistance to the incipient spread of fire to the roof space of one hour, as determined in the Standard Fire Test; and

(b) shall be so fixed to the floor, roof, or ceiling concerned as to be held by it against overturning in the event of fire.

(12) In a building of Type 1 construction—

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

(b) non-loadbearing—

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

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

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

(13) Where, pursuant to subclause (8) or subclause (9), a roof that does not have a fire-resistance rating is used in a building having a rise of not more than six storeys, internal columns (excluding those referred to in subclause (10)) and internal loadbearing walls (excluding fire walls) in the storey immediately below that roof may have the following fire-resistance ratings instead of those listed in Table 16.7:

(a) Class II and Class III buildings—one hour;

(b) Class V, VI, VII and VIII buildings—one hour if the building has a rise exceeding three storeys, but otherwise no rating.

(14) Notwithstanding Table 16.7, the fire-resistance rating specified in Column 3 of Table 16.7 (14) shall apply to the structural members listed opposite thereto in Column 1 of that Table for the classes of buildings listed in Column 2 of that Table in the case of buildings more than 25 m in height.
TABLE 16.7 (14)
FIRE-RESISTANCE RATINGS APPLYING TO BUILDINGS
MORE THAN 25 m IN HEIGHT

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural members</td>
<td>Classes of buildings</td>
<td>Minimum fire-resistance rating required</td>
</tr>
<tr>
<td>(a) Lift shafts and stair shafts (other than those mentioned in (b) hereunder) whether loadbearing or not.</td>
<td>II and III</td>
<td>2 hours</td>
</tr>
<tr>
<td>(b) Stair shafts and doors to required fire-isolated stairways in storeys wholly or partly below ground to the extent that the storey is not counted in the rise in storeys of the building.</td>
<td>All classes</td>
<td>3 hours</td>
</tr>
<tr>
<td>(c) Ventilating, pipe, garbage and the like shafts (not intended for the discharge of hot products of combustion) whether loadbearing or not.</td>
<td>II, III, V and IX</td>
<td>2 hours</td>
</tr>
<tr>
<td>(d) Fire walls.</td>
<td>II and III</td>
<td>2 hours</td>
</tr>
<tr>
<td>(e) Floors (including floor beams).</td>
<td>II and III</td>
<td>2 hours</td>
</tr>
</tbody>
</table>

16.8. (1) In a building required to be of Type 2 construction—

(a) external walls, common or party walls, and any beams or columns incorporated in them shall be non-combustible; and

(b) each part mentioned in Table 16.8, and any beam or column incorporated in it, shall (subject to the modifications set out in this clause and clause 23.2 (3) (a))—

(i) have a fire-resistance rating not less than that listed in the Table, for the particular class of building concerned; and

(ii) be constructed according to subclause (10) or subclause (11) if applicable.
### TABLE 16.8

**TYPE 2 CONSTRUCTION: FIRE-RESISTANCE RATINGS OF STRUCTURAL MEMBERS**

<table>
<thead>
<tr>
<th>Structural members</th>
<th>Ratings (in hours)</th>
<th>Class of building</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>II</td>
<td>III</td>
</tr>
<tr>
<td>External walls (including beams and columns incorporated in them) and other external structural members where in terms of clause 16.6, the effective distance between the wall or other member and any fire-source feature to which it is exposed is—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>for loadbearing parts—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than 4.5 m</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4.5 m to less than 6 m</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>6 m or more</td>
<td>1½</td>
<td>1½</td>
</tr>
<tr>
<td>for non-loadbearing parts (including spandrels)—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than 4.5 m</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4.5 m to less than 6 m</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>6 m to less than 7.5 m</td>
<td>1½</td>
<td>1½</td>
</tr>
<tr>
<td>7.5 m to less than 9 m</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>9 m or more</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Common walls and party walls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal loadbearing walls and fire walls (including those bounding public corridors, public hallways, and the like, or between or bounding sole-occupancy units, and those of loadbearing shafts)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lift shafts and stair shafts required to be fire-resisting that are not loadbearing</td>
<td>1½</td>
<td>1½</td>
</tr>
<tr>
<td>Ventilating, pipe, garbage, and like shafts neither intended for discharge of hot products of combustion nor loadbearing</td>
<td>1½</td>
<td>1½</td>
</tr>
<tr>
<td>Internal non-loadbearing walls (including partition walls)—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bounding public corridors, public hallways, and the like between or bounding sole-occupancy units</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>bounding a stairway that is not required to be enclosed by a fire-resisting shaft</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
### TABLE 16.8—continued

**TYPE 2 CONSTRUCTION: FIRE-RESISTANCE RATINGS OF STRUCTURAL MEMBERS—continued**

<table>
<thead>
<tr>
<th>Structural members</th>
<th>Ratings (in hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class of building</td>
</tr>
<tr>
<td></td>
<td>II</td>
</tr>
<tr>
<td>Floors (including floor beams), roofs (including roof beams and trusses), and internal columns</td>
<td>1</td>
</tr>
</tbody>
</table>

**NOTE: Class IV portions—fire-resistance ratings shall be as required by clauses 17.7 or 18.7.**

(2) In a building of Type 2 construction, a floor or roof shall be deemed to have a fire-resistance rating of one hour if—

(a) the ceiling immediately below the floor or roof has a resistance to the incipient spread of fire to the space above itself of one hour, as determined in the Standard Fire Test; and

(b) in the case of a roof, the roof covering is non-combustible.

(3) In a building of Type 2 construction the following floors need not have a fire-resistance rating:

(a) A floor laid directly on the ground.

(b) A floor, not laid directly on the ground, the space below which is not a storey and is not designed, constructed or adapted for—

   (i) the accommodation of motor vehicles; or

   (ii) the accommodation of bathrooms, shower rooms, laundries, water closets, or other sanitary compartments; or

   (iii) use as a work area; or

   (iv) storage or any other ancillary purpose thereto.

(4) In a Class II building not in a fire zone a fire-resistance rating of 1½ hours shall apply, as a modification of Table 16.8, for any structural member, except a common or party wall, required by that Table to have a fire-resistance rating exceeding 1½ hours.
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(5) In a Class II building of Type 2 construction a floor separating two storeys within a single flat need not have a fire-resistance rating if the walls bounding that flat are non-combustible.

(6) Where the roof of a building and the ceiling immediately below that roof comply with subclause (2), a fire-resistance rating of one hour shall apply as a modification of Table 16.8, for an internal loadbearing wall (excluding a fire wall) in the storey immediately below that roof.

(7) For an open-deck parking station the following fire-resistance ratings shall apply, as modifications of Table 16.8:

(a) For a column situated, in terms of clause 16.6, at an effective distance of—

(i) less than 4.5 m from a fire-source to which it is exposed 2 hours;

(ii) 4.5 m to less than 9 m from such a feature 1½ hours;

(iii) 9 m or more from such a feature 1 hour.

(b) For an internal loadbearing wall or fire wall 2 hours.

(8) In a building of Type 2 construction, the roof and its internal supporting columns (excluding those referred to in subclause (9)) need not comply with subclause (1) if the rise of the building does not exceed two storeys.

(9) Those parts of an internal column in a building of Type 2 construction that—

(a) face and are within 1.5 m of a window; and

(b) are exposed (in terms of clause 16.6) through that window to a fire-source feature—

shall, if the effective distance between the fire-source feature and the part of the column concerned is less than 6 m, have a fire-resistance rating of not less than 1½ hours.
(10) A partition wall required by Table 16.8 to have a fire-resistant rating—

(a) shall extend to—

(i) the underside of the floor, if any, next above; or

(ii) the underside of a roof complying with subclause (1); or

(iii) a ceiling as described in subclause (2); and

(b) shall—

(i) be so fixed to the floor, roof, or ceiling concerned as to be held by it against overturning in the event of fire; or

(ii) be of concrete or masonry carried on a wall of concrete or masonry below.

(11) In a building of Type 2 construction—

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

(b) non-loadbearing—

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

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

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

16.9. (1) In a building required to be of Type 3 construction—

(a) external walls, common or party walls, and any beams or columns incorporated in them shall be non-combustible;
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(b) each part mentioned in Table 16.9, and any beam or column incorporated in it, shall (subject to the modifications set out in this clause)—

(i) have a fire-resistance rating not less than that listed in the Table, for the particular class of building concerned; and

(ii) be constructed according to subclause (6) or subclause (9) if applicable; and

(c) parts mentioned in subclause (5) shall be constructed in the way specified in that subclause.

<table>
<thead>
<tr>
<th>Structural members</th>
<th>Class of building</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>II</td>
</tr>
<tr>
<td>External walls (including beams and columns incorporated in them) and other external structural members where, in terms of clause 16.6, the effective distance between the wall or other member and any fire-source feature to which it is exposed is—</td>
<td></td>
</tr>
<tr>
<td>for loadbearing parts—</td>
<td>3</td>
</tr>
<tr>
<td>less than 4.5 m</td>
<td></td>
</tr>
<tr>
<td>4.5 m to less than 6 m</td>
<td>2</td>
</tr>
<tr>
<td>6 m or more</td>
<td>1½</td>
</tr>
<tr>
<td>for non-loadbearing parts (including spandrels)—</td>
<td>3</td>
</tr>
<tr>
<td>less than 4.5 m</td>
<td></td>
</tr>
<tr>
<td>4.5 m to less than 6 m</td>
<td>2</td>
</tr>
<tr>
<td>6 m to less than 7.5 m</td>
<td>1½</td>
</tr>
<tr>
<td>7.5 m to less than 9 m</td>
<td>1</td>
</tr>
<tr>
<td>9 m or more</td>
<td>½</td>
</tr>
<tr>
<td>Common walls and party walls</td>
<td>4</td>
</tr>
<tr>
<td>Internal loadbearing walls and fire walls (including those bounding public corridors, public hallways, and the like, or between or bounding sole-occupancy units, and those of loadbearing shafts)</td>
<td>1½</td>
</tr>
</tbody>
</table>
**TABLE 16.9—continued**

**TYPE 3 CONSTRUCTION: FIRE-RESISTANCE RATINGS OF STRUCTURAL MEMBERS—continued**

<table>
<thead>
<tr>
<th>Structural members</th>
<th>Class of building</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>II</td>
</tr>
<tr>
<td>Internal loadbearing walls and fire walls (including those bounding public corridors, public hallways, and the like, or between or bounding sole-occupancy units, and those of loadbearing shafts)</td>
<td>$1\frac{1}{2}$</td>
</tr>
<tr>
<td>Lift shafts and stair shafts required to be fire-resisting that are not loadbearing</td>
<td>$1\frac{1}{2}$</td>
</tr>
<tr>
<td>Ventilating, pipe, garbage, and like shafts neither intended for discharge of hot products of combustion nor loadbearing</td>
<td>$1\frac{1}{2}$</td>
</tr>
<tr>
<td>Internal non-loadbearing walls (including partition walls)— bounding public corridors, public hallways, and the like</td>
<td>1</td>
</tr>
<tr>
<td>between or bounding sole-occupancy units</td>
<td>1</td>
</tr>
<tr>
<td>bounding a stairway that is not required to be enclosed by a fire-resisting shaft</td>
<td>1</td>
</tr>
</tbody>
</table>

NOTE: Class IV portions—fire-resistance ratings shall be as required by clauses 17.7 or 18.7.

(2) In a Class II building not in a fire zone a fire-resistance rating of 1\frac{1}{2} hours shall apply, as a modification of Table 16.9, for any structural member, except a common or party wall, required by that Table to have a fire-resistance rating exceeding 1\frac{1}{2} hours.

(3) An internal loadbearing wall (excluding a fire wall) in a storey immediately below the roof shall not be required to comply with subclause (1), but in a Class II or Class III building—

(a) shall have a fire-resistance rating of not less than one hour if the wall bounds—

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

(ii) a sole-occupancy unit; or
(iii) a stairway that is not required to be enclosed by a fire-resisting shaft; and

(b) shall, if it is a wall referred to in paragraph (a), extend—

(i) to the underside of a ceiling having a resistance to the incipient spread of fire to the roof space of not less than one hour, as determined in the Standard Fire Test; or

(ii) to the underside of the roof covering if it is non-combustible; or

(iii) 450 mm above the adjoining roof covering if it is combustible,

and in the case of subparagraphs (ii) and (iii) shall not be crossed by timber purlins or other combustible material.

Class VII—Open-deck parking stations; modifications for certain parts

(4) For an open-deck parking station the following fire-resistance ratings shall apply, as modifications of Table 16.9:

(a) For a column situated, in terms of clause 16.6, at an effective distance of—

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

(ii) 6 m or more from such a feature—Nil.

(b) For an internal loadbearing wall or fire wall—2 hours.

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

(5) Where, in a building of Type 3 construction, a stair shaft supports a floor or any structural part thereof, the junction of—

(a) the stair shaft; and

(b) the floor or part,

shall, unless the floor or part has a fire-resistance rating of one hour or more, be so constructed that the floor or part, if sagging or falling as a result of fire, will be free to do so without causing structural damage to the shaft.
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(6) In a Class II or Class III building, a partition wall required by Table 16.9 to have a fire-resistance rating shall extend—

(a) to the underside of the floor, if any, next above; or

(b) to the underside of a ceiling having a resistance to the incipient spread of fire to the space above itself of not less than one hour, as determined in the Standard Fire Test; or

(c) to the underside of the roof covering if it is non-combustible; or

(d) 450 mm above the adjoining roof covering if it is combustible,

and in the case of paragraphs (c) and (d) shall not be crossed by timber purlins or other combustible material.

(7) In a Class II or III building, or portion of a building, of Type 3 construction, the ceiling of the top-most or only storey shall have a resistance to the incipient spread of fire to the space above itself of not less than one hour as determined in the Standard Fire Test, except in a sole-occupancy unit in that storey—

(a) where all the internal walls bounding that unit that are required by this clause to have a fire-resistance rating extend to the roof covering and the roof covering is non-combustible; or

(b) where that unit is the only sole-occupancy unit in that storey.

(8) In a Class II, III or IX building, or portion of a building of Type 3 construction, the following, if combustible or of metal shall be covered with a fire-protective material in accordance with clause 16.12, unless the structural member concerned has a fire-resistance rating of not less than half an hour:

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

(i) the accommodation of motor vehicles; or

(ii) the accommodation of bathrooms, shower rooms, laundries, water closets, or other sanitary compartments; or
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(iii) use as a work area; or
(iv) storage or any other ancillary purpose thereto.

(b) A column supporting such a floor.

(9) Subclause (8) does not apply in relation to—
(a) a floor that merely separates 2 storeys within a flat; or
(b) a column supporting such a floor,
in a Class II building of Type 3 construction.

(10) In a building of Type 3 construction—
(a) internal loadbearing walls and fire walls (including those that are parts of loadbearing shafts) shall be of concrete or masonry; and
(b) non-loadbearing—
(i) lift shafts and stair shafts required to be fire resistant; and
(ii) ventilating, pipe, garbage, and similar shafts that are not intended for discharge of hot products of combustion,
shall be of concrete, masonry, or plaster on metal lath or other material not less hard and dense than plaster on metal lath.

16.10. (1) In a building of Type 4 construction all parts mentioned in this clause shall be constructed in accordance with the relevant requirements set out herein.

(2) Each part mentioned in Table 16.10, and any beam or column incorporated in it, shall (subject to the modification set out in subclause (3))—
(a) be non-combustible; and
(b) have a fire-resistant rating not less than that listed in the Table, for the particular class of building concerned.
TABLE 16.10

TYPE 4 CONSTRUCTION: FIRE-RESISTANCE RATINGS OF STRUCTURAL MEMBERS

<table>
<thead>
<tr>
<th>Structural members</th>
<th>Class of buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>V</td>
</tr>
<tr>
<td>External walls (including beams and columns incorporated in them) and other external structural members where, in terms of clause 16.6, the effective distance between the wall or other member and any fire-source feature to which it is exposed is less than 3 m</td>
<td>1</td>
</tr>
<tr>
<td>Fire walls</td>
<td>2</td>
</tr>
</tbody>
</table>

NOTE: Class IV portions—fire-resistance ratings shall be as required by clauses 17.7 or 18.7.

(3) For an open-deck parking station a fire-resistance rating of 2 hours shall apply, as a modification of Table 16.10, for a fire wall (including one that is part of a shaft).

(4) External walls not mentioned in Table 16.10 and internal loadbearing walls (including those that are parts of loadbearing shafts) shall—

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

except for that part, if any, of an internal wall that supports only a roof.

(5) Fire walls in a building of Type 4 construction shall be of concrete or masonry.

(6) Internal columns, if any, that support a floor in a building of Type 4 construction shall be of—

(a) steel, concrete, or masonry; or
(b) hardwood having dimensions of not less than 125 mm x 125 mm.
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Floors: general requirements

(7) Floors in a building of Type 4 construction shall (subject to the modification set out in subclause (8))—

(a) be non-combustible; or

(b) have their main framing (including all floor beams and joists) in—

(i) steel or concrete; or

(ii) hardwood having dimensions of not less than 100 mm x 75 mm; or

(iii) timber, other than hardwood, having dimensions of not less than 125 mm x 100 mm.

Concession for certain floors

(8) In a building of Type 4 construction the following floors need not comply with subclause (7):

(a) A floor laid directly on the ground.

(b) A floor, not laid directly on the ground, the space below which is not a storey and is not designed, constructed, or adapted for—

(i) the accommodation of motor vehicles; or

(ii) the accommodation of bathrooms, shower rooms, laundries, water closets, or other sanitary compartments; or

(iii) use as a work area; or

(iv) storage or any other ancillary purpose thereto.

Buildings of Classes II, III and IX: use of Type 4 construction

(9) A Class II, III or IX building of Type 4 construction shall, in addition to meeting the relevant requirements of this clause, comply with the provisions of clause 16.11 applicable to a building of the class concerned, regarding, as the case requires—

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

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

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

(iii) bounding a stairway;

(b) the level to which a wall referred to in paragraph (a) shall extend;
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(c) the protection to be afforded to the underside of a floor and its supporting columns, if any; and

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

(10) A Class IX building of Type 4 construction shall, in addition to meeting the relevant requirements of this clause, comply with the provisions of subclause (10) of clause 16.11 as though it were a building of Type 5 construction.

16.11. (1) In a building required to be of Type 5 construction all parts mentioned in this clause shall be constructed in accordance with the relevant requirements set out herein.

(2) Each part mentioned in Table 16.11, and any beam or column incorporated in it, shall (subject to the modifications set out in this clause) have a fire-resistance rating not less than that listed in the Table, for the particular class of building concerned.

TABLE 16.11

<table>
<thead>
<tr>
<th>Structural members</th>
<th>Class of building</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>II</td>
</tr>
<tr>
<td>External walls (including beams and columns incorporated in them) and other external structural members where, in terms of clause 16.6, the effective distance between the wall or other member and any fire-source feature to which it is exposed is less than 3 m</td>
<td>1</td>
</tr>
<tr>
<td>Fire walls</td>
<td>1½</td>
</tr>
<tr>
<td>Internal walls (including partition walls)—</td>
<td></td>
</tr>
<tr>
<td>bounding public corridors, public hallways, and the like</td>
<td>1</td>
</tr>
<tr>
<td>between or bounding sole-occupancy units</td>
<td>1</td>
</tr>
<tr>
<td>bounding a stairway</td>
<td>1</td>
</tr>
</tbody>
</table>

NOTE: Class IV portions—fire-resistance ratings shall be as required by clauses 17.7 or 18.7.
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Certain external walls to be non-combustible

(3) An external wall (including beams and columns in it) that is required by Table 16.11 to have a fire-resistance rating shall, subject to subclause (4), be non-combustible.

External walls: outer part may meet certain requirements for the wall

(4) Where an external wall is required by subclauses (2) and (3) to have a fire-resistance rating and be non-combustible, those requirements shall be deemed to have been met if the outer part of the wall has the required fire-resistance rating and is non-combustible.

Certain buildings of Classes VII and VIIIb: construction of certain external walls

(5) In a Class VII building of Type 5 construction for the storage or display of goods referred to in the Second Schedule, or in a Class VIIIb building of Type 5 construction, an external wall—

(a) that faces and is within 7.5 m of a boundary of an adjoining allotment of land; and

(b) that is not required by Table 16.11 to have a fire-resistance rating,

shall be non-combustible or be sheeted externally with non-combustible material.

Buildings of Classes II and III: concession for certain internal walls

(6) In a Class II or III building of Type 5 construction, internal walls (including partition walls) bounding a sole-occupancy unit, or separating adjoining sole-occupancy units, need not have a fire-resistance rating if there is no doorway or other opening therein and—

(a) each sole-occupancy unit concerned has direct egress to the ground or to an external balcony providing egress in two different directions from the building; and

(b) the sheeting of those walls, if not backed by concrete or masonry, is non-combustible.

Fire walls

(7) In a building containing two storeys and of Type 5 construction, fire walls shall be of concrete or masonry.
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(8) In a Class II or Class III building a partition wall required by Table 16.11 to have a fire-resistance rating shall extend—

(a) to the underside of the floor, if any, next above; or
(b) to the underside of a ceiling having a resistance to the incipient spread of fire to the space above itself of not less than one hour, as determined in the Standard Fire Test; or
(c) to the underside of the roof covering if it is non-combustible; or
(d) 450 mm above the adjoining roof covering if it is combustible,

and in the case of paragraphs (c) and (d) shall not be crossed by timber purlins or other combustible material.

(9) In a Class II or III building, or portion of a building, of Buildings of Type 5 construction, the ceiling of the topmost or only storey shall have a resistance to the incipient spread of fire to the space above itself of not less than one hour as determined in the Standard Fire Test, except in a sole-occupancy unit in that storey—

(a) where subclause (6) exempts all the internal walls bounding the sole-occupancy unit from the requirements of Table 16.11 and the ceiling is covered with a fire-protective material in accordance with clause 16.12;
(b) where all the internal walls bounding the sole-occupancy unit that are required by this clause to have a fire-resistance rating extend to the roof covering and the roof covering is non-combustible; or
(c) Where the sole-occupancy unit is the only sole-occupancy unit in that storey.

(10) In a Class II, III or IX building, or portion of a building, of Type 5 construction, the following, if combustible or of metal, shall be covered with a fire-protective material in accordance with clause 16.12, unless the structural member concerned has a fire-resistance rating of not less than half an hour:

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

(i) the accommodation of motor vehicles; or
(ii) the accommodation of bathrooms, shower rooms, laundries, water closets, or other sanitary compartments; or

(iii) use as a work area; or

(iv) storage or any other ancillary purpose thereto.

(b) A column supporting such a floor.

Exemption from requirements of subclause (10)

(11) Subclause (10) does not apply in relation to—

(a) a floor that merely separates 2 storeys within a flat; or

(b) a column supporting such a floor,

in a Class II building of Type 5 construction.

16.11.1. The provisions of clauses 16.7, 16.8, 16.9, 16.10 and 16.11 do not apply to any balcony, verandah or the like, or any supporting part incorporated therewith, that is attached to or forms part of a building unless—

(a) the balcony, verandah or the like forms part of the only path of travel to a required exit from the building;

(b) the building is of Type 1 or Type 2 construction, and the balcony, verandah or the like is situated more than 2 storeys above the lowest storey providing direct egress to a road or open space; or

(c) the building is of Type 1 or Type 2 construction, and any columns supporting the balcony, verandah or the like are of combustible construction.

16.12. The fire-protective covering or ceiling required by clauses 16.9 (8), 16.11 (9) and (10) for certain parts of a Class II, III or IX building, or portion of a building, of Type 3 or Type 5 construction shall be a lining or ceiling of—

(a) 13-mm plasterboard;

(b) 12-mm ceramic fibre reinforced silica board;

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

16.13. (1) In stairways that are required to be within fire-resisting shafts—

(a) the stairs and landings shall be constructed only of—

(i) reinforced or prestressed concrete in no part less than 75 mm thick, measured exclusive of topping; or

(ii) precast reinforced concrete, not prestressed, in no part less than 63 mm thick,

and any finish, surface, lining or the like shall comply with the provisions of clause 16.19; and

(b) structural members, if any, supporting stairs or landings shall be non-combustible and have a fire-resistance rating of not less than one-half hour, except that in the case of stairshafts fitted with an approved air-pressurising system in accordance with clause 55.8, steel supporting members may be used without structural fire protection if—

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

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

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

(2) In a Class II building having a rise of more than two storeys, the stairs and landings (including any supporting structural members) of a required stairway that is not required to be within a fire-resisting shaft shall—

(a) be constructed according to subclause (1); or
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(b) be constructed only of—

(i) reinforced or prestressed concrete; or

(ii) steel in no part less than 6 mm thick; or

(iii) timber that has—

(A) a finished thickness of not less than 44 mm;

(B) an average density at a moisture content of 12 per cent of not less than 800 kg/m³; and

(C) not been joined by means of glue unless by the process of lamination in which case it may only be glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue.

16.14. Ramps and their landings, where required to be within fire-resisting shafts, shall—

(a) be non-combustible; and

(b) have a fire-resistance rating of not less than one hour.

16.14.1. False flooring, if any, in lift pits shall be of non-combustible construction supported upon a non-combustible framework.

16.15. (1) Where a building has sections of different classes—

(a) the fire-resistance rating of a fire wall required between the sections (including a Class IV portion, if any) shall be as follows:

(i) Where the sections are served in any storey by the same public corridor, public hallway, or the like—1½ hours in that storey;

(ii) In every other case—the fire-resistance rating prescribed in this Part for the fire wall of both sections (if those ratings are the same) or for the fire wall of that section for which the greater rating is prescribed (if those ratings are different); and
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(b) a fire-resistance rating that applies according to clause 16.7 or clause 16.8 for a floor in the lower section (if one section is below the other) shall apply also for the floor between the sections.

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

(a) 2 hours; and

(b) the rating for a fire wall prescribed in this Part for the particular class of the building in which the room is situated.

(3) If a building contains not more than 4 storeys of which—

(a) one storey is a Class VII portion that is used solely for the purpose of parking motor vehicles or for some other purpose that is ancillary to the purposes of a Class II building; and

(b) the remaining storeys are Class II portions, the storey referred to in paragraph (a) shall, for the purpose only of determining the relevant fire-resisting requirements of this Part in respect of the building, be deemed to be a Class II portion of the building.

(4) If a building contains not more than 3 storeys of which—

(a) one storey is a Class VII portion that is used solely for the purpose of parking motor vehicles or for some other purpose that is ancillary to the purposes of a Class III building; and

(b) the remaining storeys are Class III portions, the storey referred to in paragraph (a) shall, for the purpose only of determining the relevant fire-resisting requirements of this Part in respect of the building, be deemed to be a Class III portion of the building.

16.15.1.*  *  *  *  *  *
16.16. (1) The provisions of this Part relating to the construction of floors and any supporting structural members shall, except as otherwise provided in this clause, apply to the floor of a mezzanine and its supporting structural members, if any.

(2) Mezzanine floors and any structural members supporting only those floors need not have a fire-resistance rating or be non-combustible if the following requirements are met:

(a) The area of the mezzanine floor shall not exceed 200 sq m or one-third of the area of the room concerned, whichever is the lesser.

(b) If a room includes two or more mezzanines and the floors of those mezzanines are at or near the same level, the aggregate area of such floors shall not exceed 200 sq m or one-third of the area of the room concerned, whichever is the lesser.

(c) Every structural member that supports any part of the building except the mezzanine floor or floors shall—

(i) if it is at any point within 6 m of the mezzanine floor or floors; and

(ii) if it is required elsewhere in this Part to have a fire-resistance rating,

have a fire-resistance rating increased from that otherwise required, such increased rating to be that set out in Column 2 of Table 16.16 (2) (c) opposite the rating otherwise required as set out in Column 1 of that Table.

**TABLE 16.16 (2) (c)**

**INCREASED FIRE-RESISTANCE RATINGS—CONSTRUCTION SURROUNDING MEZZANINES**

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating Otherwise Required (in hours)</td>
<td>Increased Rating (in hours)</td>
</tr>
<tr>
<td>½</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>1½</td>
</tr>
<tr>
<td>1½</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**NOTE:** Where the fire-resistance rating otherwise required is 4 hours, no increase in rating is necessary.
16.17. A beam, column, or other framing member—
   (a) that passes through a duct or a well within a shaft; and
   (b) that is required to have a fire-resistance rating, shall be of concrete, or be encased in concrete, and have a fire-
   resistance rating of not less than 2 hours.

16.18. (1) In a Class II or Class III building, a ceiling—
   (a) above a public corridor, public hallway, or the like, or above a stairway or ramp that is required to be bounded by fire-resisting walls; and
   (b) not forming an integral part of the floor, or roof next above, and not being a ceiling with a resistance to the incipient spread of fire to the space above itself of not less than one hour,

shall be non-combustible, and, if in a building of Type 1, or Type 2 construction, shall have only non-combustible supports.

(2) The floor and the structure (or if more than one structure, the lower or lowest of the structures) enclosing the top of the shaft of a fire-isolated stairway shall—
   (a) be non-combustible;
   (b) in the case of a Class II or III building, have a fire-
       resistance rating which is not less than 1½ hours; and
   (c) in the case of a Class V, VI, VII, VIII or IX building, have a fire-resistance rating which is not less than 2
       hours.

(3) Where subclause (2) applies to a floor and structure, clauses 16.7 (4), (8) and (9), 16.8 (2), (3) and (8), 16.9 (7), 16.10 (7) and (8) and 16.11 (9) do not apply to the floor and structure.

16.19. (1) Any material used in a Class II, III, IV, V, VI, VII, VIII or IX building shall have—
   (a) in the case of a sarking-type material, a flammability index not greater than 5; or
   (b) otherwise—
      (i) a smoke-developed index not greater than 8 if the spread-of-flame index is greater than 5; and

Certain parts within ducts or wells to be specially constructed for fire resistance

Construction of certain ceilings and stair enclosures
Buildings of Classes II and III—
ceilings and ceiling supports to be non-combustible
Floors and tops of shafts enclosing fire-isolated stairways
Application of subclause (2)
(ii) in any case a spread-of-flame index not greater than 9,

except as provided in subclauses (2) and (3).

(2) A material not complying with subclause (1) may be used in a member or assembly of members if so constructed that—

(a) when assembled as proposed in a building the material is protected on all sides and edges from exposure to air;

(b) the member or assembly of members, when subjected to the Early Fire Hazard Test in accordance with Ministerial Specification No. 8, shall have a smoke-developed index and a spread-of-flame index not exceeding those prescribed in subclause (1); and

(c) the member or assembly of members, when subjected to the conditions of the Standard Fire Test in accordance with Ministerial Specification No. 8, shall retain the protection in position so that it continues to screen the materials from access to free air for a period of not less than 10 minutes.

(3) A material that, when in place, is completely covered on all faces by concrete or masonry not less than 50 mm thick shall be deemed to comply with subclause (1).

(4) In a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp in a building described in subclause (1)—

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

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

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

(iii) if combustible, not exceed 1 mm in finished thickness and be attached directly to a non-combustible substrate;
(b) any sarking-type material used in the form of an exposed wall or ceiling, or as a finish or attachment thereto, shall have a flammability index not greater than 0; and

(c) subclauses (2) and (3) shall not apply to any material used in or as a component of a structural member.

(5) In a Class II, III or IX building, in any internal public corridor, internal public hallway or the like serving as a means of egress to a stairway required to be fire-isolated, or an external stairway used in lieu thereof, to a passageway required to be fire-isolated or to a ramp required to be fire-isolated—

(a) any material, other than a sarking-type material, used as the finish, surface, lining or the like or any attachment to or part of an attachment to any wall or ceiling shall in its entirety—

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

(ii) have a smoke-developed index not greater than 5; or

if only one of its surfaces complies with subparagraphs (i) and (ii), shall have its non-complying surface in continuous and intimate contact with a non-combustible substrate; and

(b) * * * * *

(c) subclauses (2) and (3) shall not apply to any material used—

(i) in, or as a component of, a structural member;

(ii) as the finish, surface, lining or the like; or

(iii) as an attachment to or part of an attachment to any wall or ceiling.

(6), (7) * * * * *
(8) A material being—
   (a) plaster, cement render, concrete, terrazzo, ceramic tiles or the like; or
   (b) a material referred to in clause 16.12,

shall be deemed to comply with subclauses (1), (4) and (5).

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

(10) A spread-of-flame index, smoke-developed index and flammability index required by this clause shall not apply to—
   (a) timber-framed windows; or
   (b) handrails or skirtings having a spread-of-flame index not exceeding 4; or
   (c) timber-faced fire doors; or
   (d) electrical switches, outlets, cover plates or the like manufactured from materials complying with subclause (1); or
   (e) materials used for—
      (i) a roof covering in continuous contact with a substrate;
      (ii) adhesives; or
      (iii) damp-proof courses, flashing, caulking, sealing, ground moisture barriers or the like; or
   (f) conventional paint, varnish, paint formulated specifically to reduce flame spread, lacquer or similar finishes, excluding—
      (i) nitro-cellulose lacquer; or
      (ii) coatings commonly known as “high-build” paint; or
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(g) a clear or translucent rooflight of glassfibre reinforced polyester if—

(i) the roof in which it is installed forms part of a single-storey building required to be of Type 5 construction;

(ii) it is used as part of the roof covering;

(iii) it is not prohibited by any other provision of this Ordinance;

(iv) when installed, it is not closer than 1.2 m to any gutter;

(v) when installed, it is not closer than 1.5 m to any other such rooflight;

(vi) it is not more than 14 m² in area; and

(vii) the area of rooflights per 70 m² of roof surface is not more than 14 m².

(11) Unless otherwise expressed in this Ordinance, a combustible material may be used as a finish, surface, lining or the like of, or as an attachment or part of an attachment to, a structural member required to have a fire-resistance rating or to be non-combustible if the combustible material or its use, as the case may require, complies with this clause.

(12) Where a building is more than 25 m in height—

(a) any adhesives, vapour barriers, breather coatings or sealants used on ductwork or services;

(b) any internal insulating material or acoustic material used in ductwork shafts or attenuating chambers; and

(c) any external insulating material used on ductwork, chambers or pipework,

shall have—

(d) a spread-of-flame index not greater than 0; and

(e) a smoke-developed index not greater than 3.
Exemption in relation to certain parts of ductwork

(13) Subclause (12) does not prevent the use in or on any member or structure of material which does not comply with the requirements of that subclause where—

(a) the material, as used in or on the member or structure, is not exposed to air;

(b) the member or structure has—

(i) a spread-of-flame index not greater than 0; and

(ii) a smoke-developed index not greater than 3; and

(c) the member or structure is capable (when subjected to the Early Fire Hazard Test referred to in Ministerial Specification No. 8) of protecting the material from the air for a period of not less than 10 minutes.

Construction of certain external walls and steelwork

Certain storeys to be excluded from calculations

16.20. (1) In this clause, the number of storeys contained in a building shall be deemed not to include a storey situated at the top of the building and containing only heating, ventilating, lift or other equipment or water tanks or similar service units.

(2) For the purposes of this clause, a building shall be deemed to contain only 1 storey if—

(a) the building contains 2 storeys only in some of its portions and 1 storey only in its remaining portions; and

(b) the sum of the floor areas of the upper storeys of its 2-storey portions does not exceed—

(i) one-eighth of the sum of the floor areas of its 1-storey portions;

(ii) in the case of a building to which 1 of the maximum floor areas specified in Table 19.2 is applicable—one-tenth of that area; or

(iii) in the case of a building to which 2 or more of the maximum floor areas specified in Table 19.2 is applicable—one-tenth of the lesser or least of those areas, whichever is the lesser.

Construc-tional concession: one storey

(3) Where, in a building that contains one storey only, a steel column is incorporated in an external wall that is required to have a fire-resistance rating, the column need not have a fire-resistance rating.
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(4) Where, in a building that contains more than one storey, a steel column that supports a roof truss or beam at an external wall has either no fire-resistance rating or a rating that is less than that required for the wall—

(a) the truss or beam and the column shall be so constructed that in the event of fire they will not tend to overturn the wall; and

(b) the wall shall be so constructed that it does not at any time depend upon the column for support.

16.21. (1) This clause applies to any building of Type 1 or Type 2 construction.

(2) Any article or material that is attached to, or forms part of, the outer face of external wall of a building to which this clause applies shall be non-combustible.

(3) Nothing in subclause (2) requires an article specified in Column 1 of Table 16.21 to be non-combustible if the article complies with—

(a) such requirements, if any, as are specified opposite the article in Column 2 of that Table; and

(b) such requirements, if any, as are imposed in respect of the article by any other provision of this Ordinance.

TABLE 16.21

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of article</td>
<td>Requirements</td>
</tr>
<tr>
<td>An article consisting of—</td>
<td></td>
</tr>
<tr>
<td>(a) a stairway; or</td>
<td>The article shall not be attached to a building which—</td>
</tr>
<tr>
<td>(b) a balustrade.</td>
<td>(a) is within a fire zone; or</td>
</tr>
<tr>
<td></td>
<td>(b) is not within a fire zone, but has</td>
</tr>
<tr>
<td></td>
<td>a rise of more than 2 storeys.</td>
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<tr>
<td>An article consisting of a handrail to—</td>
<td>The article shall not be situated more than</td>
</tr>
<tr>
<td>(a) a stairway;</td>
<td>25 m above the floor of the lowest storey from</td>
</tr>
<tr>
<td>(b) a balcony;</td>
<td>which direct egress to a road or open space is</td>
</tr>
<tr>
<td>(c) a balustrade.</td>
<td>provided.</td>
</tr>
<tr>
<td>Column 1</td>
<td>Column 2</td>
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<tr>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>Type of article</strong></td>
<td><strong>Requirements</strong></td>
</tr>
<tr>
<td>An article consisting of a display window, its frame, its mullions and any transom upon which it is set.</td>
<td>The article shall not be situated in a storey which is above a storey from which direct egress to a road or open space is provided.</td>
</tr>
<tr>
<td>An article consisting of—</td>
<td>The article shall not—</td>
</tr>
<tr>
<td>(a) a window (other than a display window), its frame, its mullions and any transom upon which it is set; or</td>
<td>(a) be situated in a storey which is more than 2 storeys above the lowest storey from which direct egress to a road or open space is provided; or</td>
</tr>
<tr>
<td>(b) a door (other than a fire door) and its frame.</td>
<td>(b) be situated in, or form part of, an opening which is required by clause 22.4 (1) to be protected in accordance with clause 22.4 (2).</td>
</tr>
<tr>
<td>An article consisting of—</td>
<td>The article shall not be situated in a storey which is more than 2 storeys above the lowest storey from which direct egress to a road or open space is provided.</td>
</tr>
<tr>
<td>(a) a window shutter;</td>
<td></td>
</tr>
<tr>
<td>(b) an awning, or a sun-blind or a hood, which is made of fabric, together with any supporting framework;</td>
<td></td>
</tr>
<tr>
<td>(c) guttering;</td>
<td></td>
</tr>
<tr>
<td>(d) a downpipe;</td>
<td></td>
</tr>
<tr>
<td>(e) an electrical wiring conduit; or</td>
<td></td>
</tr>
<tr>
<td>(f) a flag pole.</td>
<td></td>
</tr>
<tr>
<td>An article consisting of—</td>
<td>The article shall not exceed 0.5 m² in area.</td>
</tr>
<tr>
<td>(a) a servery hatch; or</td>
<td></td>
</tr>
<tr>
<td>(b) a service hatch.</td>
<td></td>
</tr>
<tr>
<td>An article consisting of a timber-faced fire door.</td>
<td>No requirements.</td>
</tr>
<tr>
<td>An article consisting of the purlins or battens of a non-combustible awning.</td>
<td>The article shall not be situated more than 6 m above the floor of the lowest storey from which direct egress to a road or open space is provided.</td>
</tr>
<tr>
<td>An article consisting of a sign.</td>
<td>The article shall comply with the requirements of subclause (4).</td>
</tr>
</tbody>
</table>
(4) A combustible sign that is attached to, or forms part of, the outer face of an external wall of a building to which this clause applies shall comply with the following requirements:

(a) the sign shall be situated not less than 6 m from any external stairway which, pursuant to clause 24.11, constitutes a required exit in lieu of a fire-isolated stairway;

(b) where the sign is situated less than 1 100 mm from any unprotected opening—

(i) it shall not be situated less than 1 100 mm from any unprotected opening which is located in the same external wall, but not in the same storey, as that in which that opening is located; and

(ii) it shall not be situated less than 1 100 mm from any other unprotected opening (being an opening which gives access to a space within the building that is separated by a fire wall from the space to which that opening gives access) which is located in the same external wall, and in the same storey, as that in which that opening is situated;

(c) where the sign is situated more than 6 m above the floor of the lowest storey from which direct egress to a road or open space is provided—

(i) its anchorages and framework shall be constructed of non-combustible material; and

(ii) it shall be situated not less than 3 m from any fire-source feature to which it is exposed;

(d) the sign shall not be attached to any part of an external wall consisting of a spandrel, slab or other construction which is required by clause 22.3 (2) to be provided in relation to that wall.

(5) For the purposes of this clause, an article, or material is attached to an external wall if it is attached to any other article or material that is attached to that wall.
(6) In this clause—

(a) a reference in relation to an article, to the lowest storey from which direct egress to a road or open space is provided is a reference to—

(i) the lowest storey in the building from which such egress is provided through the same facade of the building as that to which the article is attached, or of which the article forms part; or

(ii) where no such access is provided through that facade—the lowest storey in that building from which such access is provided; and

(b) a reference to an unprotected opening is a reference to an opening which is not protected in accordance with clause 22.4 (2).

16.22. A roof required by clause 16.7 to have a fire-resistance rating and to be non-combustible may be covered with built-up roofing consisting of successive layers of bitumen-impregnated, tar-impregnated, or similar roofing felt.

16.23. In a building of Type 1 or Type 2 construction, a roof, not complying with this Part as to fire-resisting construction, may be superimposed on a concrete-slab roof if—

(a) the superimposed roof and any construction between it and the concrete slab roof are non-combustible throughout; and

(b) the concrete-slab roof complies with this Part as to fire-resisting construction.

16.24. A non-combustible structure situated on a roof and containing one or more of the following only—

(a) hot-water or other water tanks; or

(b) ventilating ductwork; or

(c) ventilating fans and their motors; or

(d) air-conditioning chillers; or
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(c) window-cleaning equipment; or
(f) lift equipment; or
(g) other service units that are non-combustible and do not contain combustible fluids,

need not comply with the other provisions of this Part.

16.25. (1) Every lintel shall have the fire-resistance rating, if Lintels any, required for the part of the building in which it is situated, except as in subclause (2).

(2) Lintels that span openings—

(a) in walls of buildings containing only 1 storey;
(b) in non-loadbearing walls of Class II buildings;
(c) not exceeding 3 m in width, and bridged by non-loadbearing masonry; or
(d) not exceeding 1.8 m in width, and bridged by loadbearing masonry, being part of a solid wall or part of the leaves of a cavity wall, the masonry in each case being not more than 150 mm in thickness,

shall not be subject to subclause (1) unless the lintels contribute to the support of fire doors, fire windows or fire shutters.

16.26. The design of every method of attachment or installation—

(a) of a facing or finish to a part of a building required to have a fire-resistance rating; or
(b) of ducting or any other service to such a part,

shall provide for the attachment or installation to proceed without impairing the potential fire-resistance performance of that part.

16.27. (1) This clause applies to a building built over a public road, railway, bus terminal, or similar public facility.
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Fire ratings required

(2) The fire-resistance rating of each structural member in, immediately above, or immediately alongside the public facility concerned shall be not less than that determined by the Council, having regard to—

(a) the particular circumstances; and

(b) the other provisions of this Part.

Floor construction

(3) The Council may require that any column or floor subject to subclause (2) shall be of reinforced or prestressed concrete, or structural steel encased in concrete.

GROUP V—FIRE SAFETY AND FIRE RESISTANCE

PART 17—Construction Required Except in Fire Zones

17.1. (1) For the purposes of this Ordinance, the rise in storeys of a building shall be calculated in accordance with the rules set out in this clause.

(2) The greatest number of storeys in a building at any part of its perimeter, counted above the finished ground adjacent to the external walls at that part, shall be deemed to be the rise in storeys of the building.

Calculation where wall abuts a boundary of an adjoining allotment

(3) When any part of an external wall abuts the boundary of an adjoining allotment of land, the natural ground level at the relevant part of the boundary shall be regarded as the finished ground in reckoning the number of storeys at the part of the wall concerned.

Certain levels to be determined by the Council

(4) In applying subclause (3), if there is any doubt as to the natural ground level (because of prior excavation or other cause) this level shall be assessed to the satisfaction of the Council.

Certain storeys excluded from the reckoning

(5) In counting the number of storeys above the finished ground at any part of an external wall, a storey shall be excluded from the reckoning if—

(a) it is situated at the top of the building and contains only heating, ventilating, lift or other equipment, water tanks, or similar service units; or
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(b) it is situated partly below the finished ground against that part of the wall and extends not more than 1 m above the average level of that ground, the measurement being taken to—

(i) the underside of the ceiling; or

(ii) where there is no ceiling, the underside of the construction at the top of the storey,

except that, if the length of that part of the wall exceeds 12 m, the average level of the finished ground against it, used in the measurement, shall be the average for that 12-m section of its length where the ground is lowest.

(6) In calculating the rise in storeys of a building which incorporates one or more mezzanines—

(a) any mezzanine having a floor area of more than 200 sq m; and

(b) two or more mezzanines at or near the same level in a room and having an aggregate floor area of more than 200 sq m,

shall notwithstanding the provisions of clause 1.3 (1), be regarded as a storey in that portion of the building in which they are situated.

(7) Any storey that has an integral height of more than 5.2 m shall be regarded as—

(a) one storey, if it is the only storey above the ground; or

(b) two storeys in any other case.

(8) The rise in storeys of a section of a building that is fire-separated, by a fire wall complying with clause 23.1, from the remainder of the building shall be determined as though the section were itself a building.
17.2. (1) The type of fire-resisting construction required in a building of Class II, III, V, VI, VII, VIII or IX—

(a) except in a fire zone; and

(b) except as conceded in clauses 17.4, 17.5 and 17.6 for certain Class II buildings, and in clause 17.8 for open-deck parking stations,

shall be that stated in the relevant column of Table 17.2.

### TABLE 17.2

TYPE OF FIRE-RESISTING CONSTRUCTION REQUIRED EXCEPT IN A FIRE ZONE

<table>
<thead>
<tr>
<th>Rise in storeys</th>
<th>Class of building</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>II</td>
</tr>
<tr>
<td>6 or more</td>
<td>Type 1</td>
</tr>
<tr>
<td>5</td>
<td>Type 2</td>
</tr>
<tr>
<td>4</td>
<td>Type 2</td>
</tr>
<tr>
<td>3</td>
<td>Type 3</td>
</tr>
<tr>
<td>2</td>
<td>Type 3</td>
</tr>
<tr>
<td>1</td>
<td>Type 5</td>
</tr>
</tbody>
</table>

NOTE: Class IV portions—fire-resisting construction shall be as required by clause 17.7.

(2) A section of a building that is fire-separated, by a fire wall complying with clause 23.1, from the remainder of the building shall be subject to subclause (1) as though the section were itself a building.

(3) In a building of mixed classifications, the type of fire-resisting construction required shall be that type of construction that is the most fire-resistant of the types arising from the application of subclause (1) at each storey, based on the assumptions that—

(a) a classification applying to the particular storey applies also to the storeys vertically below it; and

(b) the particular storey and those vertically below it comprise an entire building.
17.3. (1) For the purposes of this clause, “lightweight construction” means—

(a) that variety of fire-resisting construction in which the construction affording fire-protection—

(i) is not in continuous contact with the principal construction that it fire-protects; or

(ii) is of sheet or board material, plaster, render, sprayed, application, or other material similarly susceptible to damage by pressure or abrasion; and

(b) that variety of fire-resisting construction which incorporates or comprises—

(i) concrete containing pumice, perlite, vermiculite, or other soft material; or

(ii) masonry having a thickness of less than 70 mm.

(2) Subject to subclause (3), in a building having a rise exceeding four storeys, a beam or column, or a wall required to have a fire-resistance rating, not being a partition wall, shall not incorporate or be of lightweight construction if it is in—

(a) any Class VI, VII, or VIII portion; or

(b) any portion, regardless of its classification, that is below the level of a Class VI, VII, or VIII portion.

(3) Subclause (2) shall not apply where any Class VI portion concerned is designed, constructed, or adapted for use as—

(a) a cafe or restaurant; or

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

(c) a hairdresser’s or barber’s shop; or

(d) a shop of any other kind, the normal functioning and servicing of which would not, in the opinion of the Council, represent undue risk of damage to the lightweight construction of any beam, column, or wall.
17.4. (1) A building that is entirely of Class II and that is not in a fire zone shall be subject to subclause (2), instead of clause 17.2, if it is so designed that—

(a) no portion of any flat is vertically above any portion of another flat; and

(b) the floor between each flat and any garage below is constructed of reinforced or prestressed concrete.

(2) The type of fire-resisting construction required in a building referred to in subclause (1) shall be as follows, according to the greatest number of storeys contained in any flat, and irrespective of its rise in storeys—

(a) For three storeys contained ............... Type 2.

(b) For one or two storeys contained ............... Type 5.

17.5. A Class II or Class III building, or a building that contains Class II and Class III portions only, may be of Type 5 construction if—

(a) the building has a rise in storeys not exceeding 2; and

(b) each sole occupancy unit in the building has—

(i) its own direct access to a road or open space; or

(ii) access to not less than 2 exits in the building.

17.6. (1) Where the Council approves of the conversion of an existing building from Class I to Class II, the converted building shall be of that type of fire-resisting construction stated in the relevant column of Table 17.2, subject to the concession of clauses 17.4 or 17.5, if applicable, and to the concession for external walls set out in subclause (2) of this clause.

(2) The external walls of a building described in subclause (1) shall not be required to have a fire-resistance rating or be non-combustible if the building—

(a) is not in a fire zone; and

(b) contains not more than two storeys.
17.7. In a Class IV portion of a building—

(a) the structural members; and

(b) the construction separating that portion from other portions of the building,

shall have the same fire-resistance rating, if any, as that required for any such structural member or construction in a Class II portion of a building.

17.8. An open-deck parking station need not comply with the other requirements of this Part if—

(a) it contains not more than three storeys; and

(b) it is of Type 4 construction in which—

(i) the floors are of concrete; and

(ii) all the columns and floor beams are of steel or concrete.

GROUP V—FIRE SAFETY AND FIRE RESISTANCE

PART 18—Construction Required in Fire Zones

18.1. A building shall be deemed to be in a fire zone if not less than half its total volume, measured over the roof and the external walls, is situated within the zone.

18.2. In a primary fire zone, the type of fire-resisting construction required in a building of Class II, III, V, VI, VII, VIII or IX shall be determined in accordance with Table 18.2.

<table>
<thead>
<tr>
<th>Rise in storeys</th>
<th>Type of construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 or more</td>
<td>Type 1</td>
</tr>
<tr>
<td>2</td>
<td>Type 2</td>
</tr>
<tr>
<td>1</td>
<td>Type 3</td>
</tr>
</tbody>
</table>

NOTE: Class IV portions—fire-resisting construction shall be as required by clause 18.7.

18.3. In a secondary fire zone, the type of fire-resisting construction required in a building of Class II, III, V, VI, VII, VIII or IX shall be that stated in the relevant column of Table 18.3.
TABLE 18.3
TYPE OF FIRE-RESISTING CONSTRUCTION REQUIRED
IN A SECONDARY FIRE ZONE

<table>
<thead>
<tr>
<th>Rise in storeys</th>
<th>II</th>
<th>III</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
<th>VIII</th>
<th>VIIIa</th>
<th>VIIIb</th>
<th>IXa</th>
<th>IXb</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 or more</td>
<td>Type 1</td>
<td>Type 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Type 2</td>
<td>Type 2</td>
<td>Type 2</td>
<td>Type 2</td>
<td>Type 2</td>
<td>Type 2</td>
<td>Type 2</td>
<td>Type 2</td>
<td>Type 2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Type 2</td>
<td>Type 2</td>
<td>Type 3</td>
<td>Type 3</td>
<td>Type 3</td>
<td>Type 3</td>
<td>Type 3</td>
<td>Type 2</td>
<td>Type 2</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Type 3</td>
<td>Type 3</td>
<td>Type 3</td>
<td>Type 3</td>
<td>Type 3</td>
<td>Type 3</td>
<td>Type 3</td>
<td>Type 3</td>
<td>Type 3</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Class IV portions—fire-resisting construction shall be as required by clause 18.7.

18.4. A section of a building that is fire-separated by a fire wall complying with clause 23.1, from the remainder of the building shall be subject to clause 18.2 or clause 18.3, as the case requires, as though the section were itself a building.

18.5. In a building of mixed classifications, the type of fire-resisting construction required in a fire zone shall be that type of construction that is the most fire-resistant of the types arising from the application of clause 18.2 or clause 18.3, as the case requires, at each storey, based on the assumptions that—

(a) a classification applying to the particular storey applies also to the storeys vertically below it; and

(b) the particular storey and those vertically below it comprise an entire building.

18.6. Clause 17.3 regarding restrictions on the use of lightweight construction in certain buildings extends to buildings in a fire zone.

18.7. In a Class IV portion of a building—

(a) the structural members; and

(b) the construction separating that portion from other portions of the building,

shall have the same fire-resistance rating, if any, as that required for any such structural member or construction in a Class II portion of a building.
18.8. A Class I building in a fire zone, if containing more than two storeys, shall have external walls of concrete or masonry.

18.9. A Class X building in a fire zone, if containing more than one storey, shall have external walls of concrete or masonry.

18.10. An open-deck parking station need not comply with the other requirements of this Part if—

(a) the number of storeys it contains does not exceed the number stated in Table 18.10, according to the category of fire zone in which the building is situated and the average area across each storey measured to the outside of the building and irrespective of any internal walls (including fire walls);

(b) the area across any storey is not less than the area across a storey at a higher level; and

(c) the building is of Type 4 construction in which—

(i) floors of concrete or concrete and steel decking are provided at each parking level;

(ii) the floors are structurally continuous across all floor beams, and have a fire-resistance rating of ½ hour or more;

(iii) the floor beams which have any part less than 3 m from the outside of a floor have a fire-resistance rating of 1½ hours or more;

(iv) the other floor beams and the columns are of steel or concrete; and

(v) any part of an internal column that—

(A) is exposed, in terms of clause 16.6, to a fire-source feature; and

(B) has an effective distance of less than 9 m between itself and the fire-source feature, has a fire-resistance rating of 2 hours or more.
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TABLE 18.10
MAXIMUM PERMISSIBLE NUMBER OF STOREYS ACCORDING TO CATEGORY OF FIRE ZONE AND AVERAGE AREA ACROSS EACH STOREY

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

<table>
<thead>
<tr>
<th>Category of fire zone</th>
<th>Maximum permissible number of storeys for an average area across each storey (in square metres) of—</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less than 650</td>
</tr>
<tr>
<td>Primary</td>
<td>5</td>
</tr>
<tr>
<td>Secondary</td>
<td>4</td>
</tr>
</tbody>
</table>

GROUP V—FIRE SAFETY AND FIRE RESISTANCE

PART 19—Floor-area Limitations

19.1. (1) In this Part, the number of storeys contained in a building shall be deemed not to include a storey situated at the top of the building and containing only heating, ventilating, lift, or other equipment, water tanks, or similar service units and the floor area of such a storey shall not be taken into account for the purposes of this Part.

(2) For the purposes of this Part, a Class VII or Class VIII building, or a building that contains portions of another classification that are merely ancillary to the use of the building as a Class VII or Class VIII building, shall be deemed to contain only 1 storey if—

(a) the building contains 2 storeys only in some of its portions and 1 storey only in its remaining portions; and

(b) the sum of the floor areas of the upper storeys of its 2-storey portions does not exceed—

(i) one-eighth of the sum of the floor areas of its 1-storey portions;

(ii) in the case of a building to which 1 of the maximum floor areas specified in Table 19.2 is applicable—one-tenth of that area; or
(iii) in the case of a building to which 2 or more of the maximum floor areas specified in Table 19.2 is applicable—one-tenth of the lesser or least of those areas,

whichever is the lesser.

19.2. (1) This clause applies to Class V, VI, VII and VIII buildings of Type 2, 3, 4, or 5 construction, subject to the exemptions permissible under clauses 19.3 and 19.4 in regard to certain buildings containing only one storey.

(2) In a building to which this clause applies, the sum of the floor areas of all storeys shall not (subject to subclause (3)) exceed the relevant maximum floor area set out in Table 19.2.

(3) In a building containing two or more storeys, the relevant maximum floor area set out in Table 19.2 shall apply to each storey, instead of the sum of all storeys, if—

(a) every floor (including its vertical supports) between the storeys has a fire-resistance rating of not less than 2 hours;

(b) the storeys are not interconnected by escalators;

(c) every lift well, stairway, or ramp is bounded by a shaft that has a fire-resistance rating of not less than two hours; and

(d) the external walls, in a building of Type 4 or Type 5 construction, are of concrete or masonry.

(4) Where a storey is divided into sections by fire walls, the following rules shall apply:

(a) If the building contains only one storey, the relevant maximum floor area set out in Table 19.2 shall apply to each such section as though it were a complete building.

(b) If the building contains two or more storeys and complies with subclause (3), the relevant maximum floor area set out in Table 19.2 shall apply to each such section as though it were a complete storey.
### TABLE 19.2

**MAXIMUM FLOOR AREAS ACCORDING TO TYPE OF FIRE RESISTING CONSTRUCTION, CLASSIFICATION, AND WHETHER OR NOT A SPRINKLER SYSTEM IS INSTALLED**

(In square metres)

In this Table, the maximum floor areas apply to—

(a) the total floor area throughout a single or multi-storey building; or

(b) the floor areas of each storey of a building if the provisions of subclause (3) of clause 19.2 are met.

<table>
<thead>
<tr>
<th>Type of fire-resisting construction of building</th>
<th>Class V</th>
<th>Class VI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not sprinklered</td>
<td>Sprinklered</td>
</tr>
<tr>
<td>Type 2</td>
<td>5 500</td>
<td>9 000</td>
</tr>
<tr>
<td>Type 3</td>
<td>5 500</td>
<td>9 000</td>
</tr>
<tr>
<td>Type 4</td>
<td>4 500</td>
<td>7 500</td>
</tr>
<tr>
<td>Type 5</td>
<td>2 800</td>
<td>4 500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of fire-resisting construction of building</th>
<th>Class VII</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For storage or display of goods not referred to in Second Schedule (Medium or low hazard)</td>
</tr>
<tr>
<td></td>
<td>Not sprinklered</td>
</tr>
<tr>
<td>Type 2</td>
<td>5 500</td>
</tr>
<tr>
<td>Type 3</td>
<td>5 500</td>
</tr>
<tr>
<td>Type 4</td>
<td>4 500</td>
</tr>
<tr>
<td>Type 5</td>
<td>2 800</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class VIIIa (Medium or low hazard)</th>
<th>Class VIIIb (High hazard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not sprinklered</td>
<td>Sprinklered</td>
</tr>
<tr>
<td>Type 2</td>
<td>5 500</td>
</tr>
<tr>
<td>Type 3</td>
<td>5 500</td>
</tr>
<tr>
<td>Type 4</td>
<td>4 500</td>
</tr>
<tr>
<td>Type 5</td>
<td>2 800</td>
</tr>
</tbody>
</table>
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19.3. (1) A building containing only one storey and having a floor area not exceeding 18 000 m² shall not be subject to the floor-area limitations specified in clause 19.2 if—

(a) an open space, not less than 18 m in width, is provided on or associated with the site of the building in accordance with clause 19.5; or

(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; and

(iv) windows and other openings in every external wall facing the boundary of an adjoining allotment of land shall be so limited in area as to comply with clause 19.9.

(2) For the purposes of subclause (1), where the subject building is of Class VI, VII or VIII its floor area shall be determined in accordance with the provisions of clause 19.4 (2).

19.4. (1) A Class VI, VII or VIII building containing only one storey and having a floor area exceeding 18 000 m² shall not be subject to the floor-area limitations specified in clause 19.2 if—

(a) an open space, not less than 24 m in width, is provided on or associated with the site of the building in accordance with clause 19.5; or

(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 allotment 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 and 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;
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(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 fibre reinforced silica board and excluding fibre 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
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(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 19.9**

MAXIMUM PERMISSIBLE AGGREGATE AREAS OF WINDOWS AND OTHER OPENINGS

<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.</td>
</tr>
<tr>
<td>1.5 to less than 2</td>
<td>1</td>
<td>Nil.</td>
</tr>
<tr>
<td></td>
<td>1.25</td>
<td>0.5 in any 2-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>1 in any 2-m length of wall.</td>
</tr>
<tr>
<td>2 to less than 3</td>
<td>0.75</td>
<td>Nil.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0.5 in any 3-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.25</td>
<td>1 in any 3-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>2 in any 3-m length of wall.</td>
</tr>
<tr>
<td>3 to less than 4.5</td>
<td>0.5</td>
<td>Nil.</td>
</tr>
<tr>
<td></td>
<td>0.75</td>
<td>1 in any 4-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2 in any 4-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.25</td>
<td>3 in any 4-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>4 in any 4-m length of wall.</td>
</tr>
<tr>
<td>4.5 to less than 6</td>
<td>Nil.</td>
<td>Nil.</td>
</tr>
<tr>
<td></td>
<td>0.25</td>
<td>1.5 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>0.5</td>
<td>3 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>0.75</td>
<td>4 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>5 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.25</td>
<td>6.5 in any 5-m length of wall.</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>7.5 in any 5-m length of wall.</td>
</tr>
</tbody>
</table>