

Specification C1.10 Fire hazard properties

Deemed-to-Satisfy Provisions

1. Scope

This Specification sets out requirements in relation to the *fire hazard properties* of linings, materials and assemblies in Class 2 to 9 buildings as set out in [Table 1](#).

2. Application

Linings, materials and assemblies in Class 2 to 9 buildings must comply with the appropriate requirement described in [Table 1](#).

Table 1 Fire hazard property requirements

Lining, material or assembly	Requirement
Floor linings and floor coverings	Clause 3
Wall linings and ceiling linings	Clause 4
Air-handling ductwork	Clause 5
Lift cars	Clause 6
In fire control rooms subject to Specification C1.8 and fire isolated <i>exits</i>	Clause 7
In Class 9b buildings used as a theatre, public hall or the like— (a) fixed seating in the audience area or auditorium; and (b) a proscenium curtain <i>required</i> by Specification H1.3	Clause 7
Escalators, moving walkways and non- <i>required</i> non- <i>fire-isolated stairways</i> or pedestrian ramps subject to Specification D1.12	Clause 7
<i>Sarking-type material</i>	Clause 7
Attachments to internal floors, walls and ceilings	Clause 7
Other materials including insulation	Clause 7

3. Floor linings and floor coverings

A floor lining or floor covering must have—

- (a) a *critical radiant flux* not less than that listed in [Table 2](#); and
- (b) in a building not protected by a sprinkler system (other than a FPAA101D or FPAA101H system) complying with [Specification E1.5](#), a maximum *smoke development rate* of 750 percent-minutes; and
- (c) a *group number* complying with [Clause 6\(b\)](#), for any portion of the floor covering that is continued more than 150 mm up a wall.

Table 2 Critical radiant flux (CHF in kW/m²) of floor linings and floor coverings

Class of building	Building not fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5	Building fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5	Fire-isolated <i>exits</i> and fire control rooms
Class 2, 3, 5, 6, 7, 8 or 9b, excluding— (i) Class 3 accommodation for the aged; and (ii) Class 9b as specified below	2.2 kW/m ²	1.2 kW/m ²	2.2 kW/m ²
Class 3	4.5 kW/m ²	2.2 kW/m ²	4.5 kW/m ²

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Class of building	Building not fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5	Building fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5	Fire-isolated <i>exits</i> and fire control rooms
Accommodation for the aged			
Class 9a <i>Patient care areas</i>	4.5 kW/m ²	2.2 kW/m ²	4.5 kW/m ²
Class 9a Areas other than <i>patient care areas</i>	2.2 kW/m ²	1.2 kW/m ²	4.5 kW/m ²
Class 9b auditorium or audience seating area used mainly for indoor swimming or ice skating	1.2 kW/m ²	1.2 kW/m ²	2.2 kW/m ²
Class 9b auditorium or audience seating area used mainly for— other sports or multi-purpose functions.	2.2 kW/m ²	1.2 kW/m ²	2.2 kW/m ²
Class 9c <i>resident use areas.</i>	N/A	2.2 kW/m ²	4.5 kW/m ²
Class 9c Areas other than <i>resident use areas.</i>	N/A	1.2 kW/m ²	4.5 kW/m ²

4. Wall and ceiling linings

- (a) A wall or ceiling lining system must comply with the *group number* specified in Table 3 and for buildings not fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 have—
- (i) a *smoke growth rate index* not more than 100; or
 - (ii) an *average specific extinction area* less than 250 m²/kg.
- (b) A *group number* of a wall or ceiling lining and the *smoke growth rate index* or *average specific extinction area* must be determined in accordance with AS 5637.1.

Table 3 Wall and ceiling lining materials (material groups permitted)

Class of building	Fire-isolated <i>exits</i> and fire control rooms	Public corridors	Specific areas	Other areas
Class 2 or 3, Unsprinklered Excluding accommodation for the aged, people with disabilities, and children	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 2 or 3, Sprinklered Excluding accommodation for the aged, people with disabilities, and children	Walls: 1 Ceilings: 1	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 3 or 9a, Unsprinklered Accommodation for the aged, people with a disability, children and <i>health-care buildings</i>	Walls: 1 Ceilings: 1	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 3 or 9a, Sprinklered Accommodation for the aged, people with a disability, children and <i>health-care buildings</i>	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 5, 6, 7, 8 or 9b <i>schools</i> , Unsprinklered	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2,

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Class of building	Fire-isolated <i>exits</i> and fire control rooms	Public corridors	Specific areas	Other areas
				3
Class 5, 6, 7, 8 or 9b <i>schools</i> , Sprinklered	Walls: 1 Ceilings: 1	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 9b other than <i>schools</i> , Unsprinklered	Walls: 1 Ceilings: 1	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 9b other than <i>schools</i> , Sprinklered	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 9c, Sprinklered	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3

Notes to Table 3:

1. "Sprinklered" means a building fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with [Specification E1.5](#).
2. "Specific areas" means within—
 - a. for Class 2 and 3 buildings, a *sole-occupancy unit*; and
 - b. for Class 5 buildings, open plan offices with a minimum floor dimension/floor to ceiling height ratio > 5; and
 - c. for Class 6 buildings, shops or other building with a minimum floor dimension/floor to ceiling height ratio > 5; and
 - d. for Class 9a *health-care buildings*, *patient care areas*; and
 - e. for Class 9b theatres and halls, etc, an auditorium; and
 - f. for Class 9b *schools*, a classroom; and
 - g. for Class 9c buildings, *resident use area*.

5. Air-handling ductwork

Rigid and flexible ductwork in a Class 2 to 9 building must comply with the *fire hazard properties* set out in AS 4254.1 and AS 4254.2.

6. Lift cars

Materials used as—

- (a) floor linings and floor coverings must have a *critical radiant flux* not less than 2.2; and
- (b) wall and ceiling linings must be a Group 1 material or a Group 2 material in accordance with AS 5637.1.

7. Other materials

[NSW Spec C1.10 NSW 7](#)

Materials and assemblies in a Class 2 to 9 building not included in [Clauses 3, 4, 5 or 6](#) must not exceed the indices set out in [Table 4](#).

Table 4 Other materials

Material or assembly location	<i>Flammability Index</i>	<i>Spread-of-Flame Index</i>	<i>Smoke-Developed Index</i>
Fire control rooms subject to Specification E1.8 and fire-isolated <i>exits</i> , other than a <i>sarking-type material</i> used in a	N/A	0	2

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Material or assembly location	Flammability Index	Spread-of-Flame Index	Smoke-Developed Index
ceiling or used as an attachment or part of an attachment to a building element. Note 1			
Class 9b buildings used as a theatre, public hall or the like: Any part of fixed seating in the audience area or auditorium.	N/A	0	5
Class 9b buildings used as a theatre, public hall or the like: A proscenium curtain required by Specification H1.3 .	N/A	0	3
Escalators, moving walkways or non- required non- fire-isolated stairways or pedestrian ramps subject to Specification D1.12 .	N/A	0	5
Sarking-type material : In a fire control room subject to Specification E1.8 or a fire-isolated exit or fire control room used in the form of an exposed wall or ceiling.	0	N/A	N/A
Sarking-type material : In other locations. Note 2	5	N/A	N/A
Other materials or locations and insulation materials other than sarking-type materials . Notes 2 and 3	N/A	9	8 if the Spread-of-Flame Index is more than 5

Notes to [Table 4](#):

1. In a fire control room or [fire-isolated stairway](#), a material used as an attachment or part of an attachment to a building element must, if [combustible](#), be attached directly to a [non-combustible](#) substrate and not exceed 1 mm finished thickness.
2. A material, other than one located within a fire-isolated [exit](#) or fire control room, may be covered on all faces by concrete or masonry not less than 50 mm thick, as an alternative to meeting the specified indices.
3. In the case of a composite member or assembly, the member or assembly must be constructed so that when assembled as proposed in a building—
 - a. any material which does not comply with this Table is protected on all sides and edges from exposure to the air; and
 - b. the member or assembly, when tested in accordance with [Schedule 6](#), has a [Spread-of-Flame Index](#) and a [Smoke-Developed Index](#) not exceeding those prescribed in this Table; and
 - c. the member or assembly retains the protection in position so that it prevents ignition of the material and continues to screen it from access to free air for a period of not less than 10 minutes.