Fire Group Ratings
&
Critical Radiant Flux

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Fire Group Ratings for Interior wall & ceiling linings

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Key Points

- Fire Group ratings are determined by the uncoated substrate

- Waterborne & solvent based paints or clear coatings applied at less than 400 microns do not alter the uncoated substrate's Fire Group rating

(Typical film build for 3 coat system would be approx. 120 microns)

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General overview of Fire Group ratings

(refer follow slide for full information)

Performance with or without coating:

Concrete & Masonry Fibre cement board	Group 1-S
Gypsum Plasterboard	Group 2-S
Solid Wood or Wood product	Group 3

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A1.5 Determining a Group Number for some surface finishes

For the purposes of compliance with the *surface finish* requirements, the specified combinations of substrate and coating in Table A1 can be taken as having the performance indicated without the need for further evaluation using A1.2 or A1.3.

Table A1 Specified performances for some substrate and coating combinations

Coating (coating in good condition and well adhered to substrate)	Substrate	Performance (with or without coating)
Waterborne or solvent borne paint coatings ≤ 0.4 mm thick Polymeric films ≤ 0.2 mm thick	Concrete and masonry ≥ 15 mm thick Sheet metal ≥ 0.4 mm thick, or Fibre-cement board ≥ 6.0 mm thick Glass	G1-S
Waterborne or solvent borne paint coatings ≤ 0.4 mm thick	Gypsum plasterboard with or without paper facing ≥ 9.5 mm thick ≥ 400 kg/m^3 core density < 5% wt organic contribution to board	G2-S
Waterborne or solvent borne paint coatings, varnish or stain ≤ 0.4 mm thick ≤ 100 g/m^2	Solid wood or wood product ≥ 9.0 mm thick ≥ 600 kg/m^3 for particle boards, or ≥ 400 kg/m^3 for all other wood and wood products	G3

Note: The requirements of this table do not apply to metal faced panels with polymeric substrate.

Source: MBIE C/VM2 Verification method: Framework for fire safety design:
For NZ Building code clauses C1-C6 Protection from Fire

Key Point

To improve Interior Timber Wall & Ceiling Lining's Group rating from Group 3 to 2-S you will require an intumescent coating

(Note: This is typically required for Crowd Spaces or Egress ways)

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Key Points

- Critical Radiant Flux rating is determined by the uncoated substrate
- Waterborne & solvent based paints or clear coatings applied at less than 400 microns do not alter the substrates uncoated Critical Radiant Flux rating

(Typical film build for 3 coat system would be approx. 120 microns)

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General overview of Critical Radiant Flux

(refer follow slide for full information)

Performance with or without coating:

Concrete, brick, ceramic, porcelain tile	4.5kW/M2
Wood Products, Plywood, Solid wood (>12mm)	2.2kW/M2

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Appendix C/VM2

Appendix B (normative): Critical Radiant Flux values for some flooring materials

B1.0 For the purposes of compliance with Clause C3.4(b) of the Building Code the following critical radiant flux values may be assigned as shown in Table B1 for the given flooring material without further evidence of testing to ISO 9239-1:2010.

Table B1 Specified performances for some flooring materials

Flooring material	Critical Radiant Flux (CRF)
Concrete[2], brick, ceramic or porcelain tile	4.5 kW/M^2
Wood Products, Plywood or Solid Timber [1,2] ≥ 12 mm thick; and ≥ 400 kg/m^3	2.2 kW/M^2

Note

1. Some timber species and thicknesses and with/without applied coatings when tested may achieve a higher CRF. When a greater CRF is required to meet Clause C3.4 (b) than given in this table, supporting test data to ISO 9239-1:2010 for the product is required.
2. May include waterborne or solvent borne applied surface coatings not more than 0.4 mm thick and not more than 100 g/m^2.

Source: MBIE C/VM2 Verification method: Framework for fire safety design:
For NZ Building code clauses C1-C6 Protection from Fire

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