



## ARCHITECTURAL WALL LININGS

# Fire Ratings

## Technical Bulletin

When timber products are used in commercial buildings, consideration needs to be given to combustibility and how this fits into the fire plan for the building. A system of 'Group Numbers' from 1-4 (least to most combustible) provides a hierarchy for the risk of the spread of flame across the surface finish based on the measured or predicted 'time to flashover' in the ISO 9705 test.

Residential buildings require timber products to achieve Group 3.\*

Commercial buildings require timber products to achieve Group 2, 2S, 1 or 1S.\*\*

MLC Group Architectural Wall Lining Profiles achieve Group 3 without any special coating. To achieve higher than Group 3, MLC Group Architectural Wall Lining Profiles require coating with an intumescent coating system.

We recommend the use of one of two different products depending on the finish the final design calls for. For a clear finish, we recommend FireZone 92. This product provides a clear, durable finish and can be applied over colour modified or dyed timber. When a solid colour / painted finish is required, we recommend FireZone 52. Once applied, this product can be overpainted with any quality, water-based pigment paint system.

The use of these products enables Group 1S fire rating to be achieved on MLC Group Architectural Timber Lining Profiles.

The process of applying intumescent coatings including FireZone 52 and 92 is complex and best carried out by an approved applicator. For a commercial project, the project manager will likely have a fire report that specifies which Group Rating is required. MLC Group can work with both the producers of the intumescent coating, the approved applicators, and the project manager to achieve the right outcome.

\* Minimum thickness of 9mm for timber with a density of less than 400kg/m<sup>3</sup>. Unless there is a conversion from residential property to multi-residential, most residential homes would not need a Group Rating more than a 3.

\*\* Minimum thickness of 9mm, timber density of 450kg/m<sup>3</sup> and coated with a suitable intumescent coating.

Note: Intumescent coatings are not designed to enable timber products to be used in high-heat situations such as near radiant heat sources. They are designed to slow down the combustion process in the event of a fire and to therefore enable people to escape to safety before the building is engulfed. Group 1S allows people 20 minutes to get out of a building.



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Contact your local MLC Group representative for more information.

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## Specified performance for solid wood and wood product coating combinations

Coating (coating in good condition and well adhered to substrate)	Substrate	Performance (with or without coating)
Waterborne or solvent borne paint coatings, varnish or stain ≤ 0.4mm thick ≤ 100 g/m <sup>2</sup>	Solid wood or wood product ≥ 9.0 mm thick ≥ 600kg/m <sup>3</sup> for particle boards, or ≥ 400 kg/m <sup>3</sup> for all other wood and wood products	Group 3
FireZone 52 – Pigmented Intumescent  FireZone 92 – Clear Intumescent	≥ 9mm ≥ 370kg/m <sup>3</sup>  ≥ 9mm ≥ 450kg/m <sup>3</sup>	Group 1S

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

MLC Group Architectural Linings are a minimum of 9mm in thickness and are greater than 450kg/m<sup>3</sup> and therefore meet or exceed the minimum requirements to achieve the above group ratings.

Technical data taken from : C/AS2 Acceptable Solution. Framework for fire safety design.

Group Ratings	Internal Surface Finishes				
	Maximum permitted Group Number				
Fire Protection	Importance Level 4 buildings: walls and ceilings	Where care or detention is provided: walls and ceilings	Spaces (excluding within household units) and crowd spaces: ceiling	Spaces (excluding within household units) and crowd spaces: wall surfaces	Occupied spaces: walls and ceilings
Unsprinklered	1-S	1-S	2-S	2-S	3
Sprinklered	2	2	2	3	3

Some exemptions enable timber products to be used without the need of intumescent coatings.

### 4.17.6 Exceptions to surface finish requirements

Surface finish requirements do not apply to: a) Small areas of non-conforming product within a firecell with a total aggregate surface area not more than 5.0 m<sup>2</sup>, or b) Electrical switches, outlets, cover plates and similar small discontinuous areas, or c) Pipes and cables used to distribute power or services, or d) Handrails and general decorative trim of any material such as architraves, skirtings and window components, including reveals, provided these do not exceed 5% of the surface area of the wall or ceiling they are part of, or e) Damp-proof courses, seals, caulking, flashings, thermal breaks and ground moisture barriers, or f) Timber joinery and structural timber building elements constructed from solid wood, glulam or laminated veneer lumber. This includes heavy timber columns, beams, portals and shear walls not more than 3.0 m wide, but does not include exposed timber panels or permanent formwork on the underside of floor/ ceiling systems, or g) Individual doorsets, or h) Continuous areas of permanently installed openable wall partitions having a surface area of not more than 25% of the divided room floor area or 5.0 m<sup>2</sup>, whichever is less, or i) Marae buildings using traditional Māori construction materials (eg, tukutuku and toetoe panels), or j) In risk group CA only, uniformly distributed roof lights where: i) the total area does not exceed 15% of the ceiling area (in plan), and ii) the minimum floor to ceiling height is not less than 6.0 m, and iii) the roof lights achieve a Group Number not greater than 3.

Educational buildings 4.17.7 Unsprinklered firecells containing classrooms, passageways and corridors of educational buildings need not comply with Table 4.3 provided all the following conditions are satisfied: a) The occupant load is less than 250, and b) The firecells are at ground floor level and are served by at least two exitways or final exits, and c) The material Group Number is no more than 2-S for surfaces 1.2 m or more above floor level, and d) The material Group Number is no more than 3 for surfaces less than 1.2 m above floor level.