AUSTRAL PLYWOODS

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Fire Performance for Timber Panel Products – Wall and Ceiling Linings

Introduction

It is of utmost importance all architects, designers, specifiers and builders are up to date with the most current information regarding the fire resistance requirements for building products in Australia. Austral Plywoods is committed to providing the market with the relevant information to ensure building products, specifically wall and ceiling linings, can be specified with the certainty of compliance.

Compliance

Building products must comply with the National Construction Code (NCC). It is important to understand the NCC documents are written as "performance" documents. Put simply, a performance solution is one where there can be multiple product solutions deemed compliant so long as the performance criteria is achieved. To meet the NCC performance criteria for wall and ceiling linings, the product must be tested in accordance with the relevant Australian standard. The relevant standard is AS5637.1:2015.

AS5637.1:2015 Determination of Fire Hazard Properties

AS5637.1 is the relevant standard used for determining the suitability of wall and ceiling linings in different building classes. Material tested in accordance with AS5637.1 determines the Material Group number. A Group number is a measure of the ignitability and heat release rate of a material expressed as a number from 1 to 4. The Material Group number is then used to determine the suitability of a material in different building classes, i.e. Building Classes 1a, 1b, 2, 3, 4, 5, 6, 7a, 7b, 8, 9a, 9b, 9c, 10a, 10b, 10c.

Test Certificates

The NCC stipulated that from May 1st 2019, test certificates quoting a Group number must be compliant in accordance with AS5637.1:2015.

AS5637.1 test certificates must detail the material tested including the species, e.g. "fire retardant treated FR MDF with veneer of Hoop Pine affixed with PVA glue".

Test certificates must also state the test method used, e.g. "tested in accordance with ISO9705:2003 (R2016) and AS5637.1:2015".

Fire Retardant Materials

AS5637.1 Section 5.3.1 states “only materials for which there are correlations between cone calorimeter results and room tests shall be tested in the cone calorimeter for the purpose of determining a Group number”.

Therefore if no empirical correlation can be proven, fire retardant panel products such as FR MDF and FR plywood must comply with ISO9705:2003 which is a full-scale room test.

Austral Plywoods FR Panel

Austral Plywoods FR Panel is a fire retardant MDF core overlaid with Hoop Pine veneer using PVA glue. As of the May 1st 2019 Austral FR Panel will be re-classified as Group 2 in accordance with AS ISO 9705:2003 (R2016) and AS5637.1:2015. The Group number was determined using a full-scale room test.

Perforations & Slotting

A Group number certificate for a panel in solid form cannot be relied upon when the panel is altered i.e. slotted or perforated.

Alterations to solid panel products such as perforations or slotting, will change the fire performance and may affect the Group number. Therefore, any altered panel must be fire tested with the perforations or slotting (in a worst case scenario) in accordance with AS5637.1:2015. Perforated or slotted panels must be tested to AS ISO 9705:2003 (R2016) which is a full-scale room test.

To explain the worst case scenario, if a perforated panel with an open area of 20% successfully passes a full-scale room test, this pass result will apply to the same panels with a perforation or slotting pattern with an open area equal to, or less than the open area of the tested panel.

References

Australian Standard AS 5637.1:2015 – Determination of fire hazard properties

Australian/New Zealand Standard AS/NZS 3837:1998 – Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter

Australian/New Zealand Standard AS/NZS 1530.3:1999 (R2016) – Methods for fire tests on building materials, components and structures

Australian/International Standard AS ISO 9705:2003 (R2016) – Fire tests - Full-scale room test for surface products

National Construction Code 2016 Building Code of Australia – Volume 1

Fact Sheet – Fire Performance, EWPAA, Version 7, August 2018

FWPA Webinar - Fire Safety & Performance of Timber Products in Multi-residential and Commercial Buildings, Forest and Wood Products Australia WPA – November 2018