Sponsor
Timber Development Association Level 2, 60 York Street Sydney 2010

Assessment of Timber Floor, Wall and Ceiling Linings to Specification C1.10a

Objective

This short form report is to confirm that the timber species listed have been assessed by Warrington Fire Research (Aust) Pty Ltd as achieving the stated performance. This report is not intended to be a comprehensive assessment of all commercially available timbers, moreover is presents the results of tested timber species available at the time of print. Should further testing be undertaken, this report could be updated to reflect these results.

Products	Timber wall, floor and ceiling materials

Assessment Report Reference	Period of Validity*
WFRA 41117.1	30-05-2005 to 31-05-2010
WFRA 21419-01	18-09-2007 to 30-09-2012
WFRA 45982.2	15-06-2007 to 30-06-2012

Test Methods	Supplementary Standards
AS/NZS 3837:1998 & AS ISO 9239.1 - 2003	None

Supporting Data

Reference is made to the following test reports WFRA 499163, 499182, 499140, 499166, 499183, 499141, 499140, 499240, 499241, 2141900, 220000A-D and CMIT report 02/276,

Description of Wall and Ceiling Linings Assessed

Solid Timber - The assessed construction is solid timber wall and ceiling linings made from the timber species listed in Table 1 being a minimum of 12mm thick and incorporate a “tongue and groove” or “square edge” profile and be of smooth milled surface finish.

Plywood - The assessed construction is plywood timber wall and ceiling linings made from the timber species listed in Table 1 being a minimum of 6mm thick and incorporate a “tongue and groove” or “square edge” profile and be of smooth milled surface finish.

Veneered MDF and Particleboard - The assessed construction is plywood timber wall and ceiling linings made from MDF (Dry Density 560-740 kg/m^3) and Particleboard (Dry Density nominally 700 kg/m^3) veneered on both faces with an unmodified, untreated timber veneer of thickness 0.6mm to 0.85mm adhered with PVA adhesive. The wall and ceiling lining shall be a minimum of 12mm thick.

REGISTERED TESTING AUTHORITY	Warrington Fire Research (Aust) Pty Ltd
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Description of Wall and Ceiling Linings Tested (cont)

Table 1 – Sold Timber Species Tested as Wall and Ceiling Linings

Ash, Alpine - *Eucalyptus delegatensis*	Gum, Spotted - *Corymbia maculata*
Ash, Mountain – *Eucalyptus regnans*	Gum, Sugar - *Eucalyptus Cladocalyx*
Ash, Silvertop - *Eucalyptus sieberi*	Gum, Yellow - *Eucalyptus leucoxylon*
Beech Myrtle - *Northofagus cunnighamii*	Ironbark, Grey – *Eucalyptus drepanophylla*
Blackbutt - *Eucalyptus pilularis*	Ironbark, Red - *Eucalyptus sideroxylon*
Blackbutt, New England - *Eucalyptus andrewsii*	Jarrah - *Eucalyptus marginata*
Blackbutt, WA - *Eucalyptus pantens*	Karri - *Eucalyptus diversicolor*
Blackwood - *Acacia melanoxylon*	Mahogany, Red - *Eucalyptus resinifera*
Bloodwood Red - *Corymbia gummifera*	Marri - *Eucalyptus callophylla*
Box, Brush - *Lopehostman confertus*	Merbau - *Instia bijuga*
Box, Grey – *Eucalyptus microcarpa*	Messmate - *Eucalyptus oblique*
Box, Grey, Coast – *Eucalyptus bosistoana*	Pine, Baltic - *Picea abies*
Brownbarrel - *Eucalyptus fastigata*	Pine, Radiata – *Pinus Radiata*
Gum, Blue, Sydney - *Eucalyptus saligna*	Pine, White Cypress - *Callitris glaucophylla*
Gum, Blue, Southern (TAS) - *Eucalyptus globulus*	Sheoak, WA - *Allocosuarina fraseriana*
Gum, Blue, Southern (VIC) - *Eucalyptus globulus*	Stringy Bark, Yellow - *Eucalyptus muellerana*
Gum, Manna - *Eucalyptus viminalis*	Tallowwood - *Eucalyptus microcorys*
Gum, Red, River - *Eucalyptus camaldulensis*	Turpentine – *Syncarpa glomulifera*
Gum, Rose – *Eucalyptus grandis*	Wattle, Silver – *Acacia dealbata*
Gum, Shining – *Eucalyptus nitens*	

Assessed Results for Wall and Ceiling Linings

The timber species listed in Table 1 have been tested and achieve the following performance when tested in accordance AS/NZS 3837:1998 and using the Method of Kokkala, Thomas and Karlsson to calculate Material group number.

Material Group Number	3
Average Extinction area	Less than 250m^2/kg

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Description of Floor Coverings Assessed

Solid Timber (No Substrate) - The assessed construction is solid timber flooring made from the timber species listed in Table 2 for a minimum thickness of 12mm and Table 3 and 4 for a minimum thickness of 19mm. The flooring shall be fixed to structural framing with an air gap behind and incorporate a "tongue and groove" or "square edge" profile and be of smooth milled surface finish.

Solid Timber (With Substrate) - The assessed construction is solid timber flooring made from the timber species listed in Table 3 and 4 for a minimum thickness of 12mm . The flooring shall be fixed directly to a substrate with PVA adhesive listed in Table 6 and incorporate a "tongue and groove" or "square edge" profile and be of smooth milled surface finish.

Plywood - The assessed construction is solid plywood flooring made from the timber species listed in Table 5. The flooring shall be fixed to structural framing with an air gap behind and can incorporate a PVC tongue profile and be of smooth milled surface finish.

Table 2 –Timber Species Assessed as Floor Coverings 12mm (min)

Ash, Alpine *Eucalyptus delegatensis*	Gum, Shining – *Eucalyptus nitens*
Ash, Mountain – *Eucalyptus regnans*	Pine, Celerytop - *Phyllocladus asplenifolius*
Gum, Blue, Sydney - *Eucalyptus saligna*	Stringy Bark, Yellow - *Eucalyptus muellerana*
Gum, Rose – *Eucalyptus grandis*	

Table 3 – Timber Species Assessed as Floor Coverings 19mm (min)

Ash, Alpine *Eucalyptus delegatensis*	Gum, Rose – *Eucalyptus grandis*
Ash, Mountain – *Eucalyptus regnans*	Gum, Shining – *Eucalyptus nitens*
Ash, Silvertop - *Eucalyptus sieberi*	Messmate - *Eucalyptus oblique*
Blackbutt - *Eucalyptus pilularis*	Pine, Celerytop - *Phyllocladus asplenifolius*
Brownbarrel - *Eucalyptus fastigata*	Pine, Radiata – *Pinus Radiata*
Gum, Blue, Sydney - *Eucalyptus saligna*	Stringy Bark, Yellow - *Eucalyptus muellerana*
Gum, Manna - *Eucalyptus viminalis*	

Table 4 – Timber Species Assessed as Floor Coverings 19mm (min)

Beech Myrtle *Northofagus cunnighamii*	Ironbark, Grey – *Eucalyptus drepanophylla*
Blackbutt, New England - *Eucalyptus andrewsii*	Ironbark, Red - *Eucalyptus sideroxylon*
Blackwood *Acacia melanoxylon*	Jarrah - *Eucalyptus marginata*
Bloodwood Red *Eucalyptus gummifera*	Karri - *Eucalyptus diversicolor*
Box, Brush - *Lopehostman confertus*	Mahogany, Red - *Eucalyptus resinifera*
Box, Grey – *Eucalyptus microcarpa*	Merbau - *Instia bijuga*
Gum, Blue, Southern (TAS) - *Eucalyptus globulus*	Pine, Baltic - *Picea abies*
Gum, Blue, Southern (VIC) - *Eucalyptus globulus*	Pine, White Cypress - *Callitris glaucophylla*
Gum, Red, River - *Eucalyptus camaldulensis*	Tallowwood - *Eucalyptus microcorys*
Gum, Spotted - C*orymbia maculata*	Turpentine – *Syncarpa glomulifera*
Gum, Sugar - *Eucalyptus Cladocalyx*	Wattle, Silver – *Acacia dealbata*
Gum, Yellow - *Eucalyptus leucoxylon*	

Table 5 – Plywood Species Assessed as Floor Coverings

Species	**Thickness (mm)**
Pine, Hoop - *Araucaria cunninghamii*	15mm or greater
Pine, Radiata – *Pinus Radiata*	17mm or greater
Pine, Slash – *Pinus Elliottii*	17mm or greater

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Table 6 – Substrates for Flooring

Substrate Specification	Thickness (mm)
Particleboard 716kg/m3	19mm or greater
Fibre cement	15mm or greater
Normal Weight Concrete floor	75mm or greater
Light weight concrete floor	75mm or greater

Test Results for Floor Coverings

The timber species listed in Table 7 have been tested or assessed and achieve the following performance when tested in accordance AS ISO 9239.1 – 2003.

Table 7 – Critical Radiant Heat Flux for Floor Coverings

Flooring Construction	Minimum Thickness	Applicable Species	Performance	
			Critical Radiant Heat Flux	Smoke Development Rate
Solid Timber (Substrates in Table 6)	12mm	Table 3 and Table 4	Between 2.2 (kW/m^2) and 4.5 (kW/m^2)	Less than 750 (%-min)
Solid Timber (No Substrate)	12mm	Table 2	Between 2.2 (kW/m^2) and 4.5 (kW/m^2)	
	19mm	Table 3 and Table 4	Between 2.2 (kW/m^2) and 4.5 (kW/m^2)	
	19mm	Table 4	More than 4.5 (kW/m^2)	
Plywood (No Substrate)	15mm or 17mm	Table 5	Between 2.2 (kW/m^2) and 4.5 (kW/m^2)	

Conditions/Validity

- This short form assessment report is based test Reports, as referenced above, prepared by Warrington Fire Research (Aust) Pty Ltd. These in turn were based on fire hazard tests conducted in accordance with AS/NZS 3837:1998 and AS ISO 9239.1 – 2003. Full details of the tests are given in the referenced test reports.
- This short form assessment report does not provide an endorsement by Warrington Fire Research (Aust) Pty Ltd of the performance of the timber species tested.
- This short form assessment report has been compiled by Warrington Fire Research (Aust) Pty Ltd for Timber Development Association. It is intended to provide a brief outline of the above referenced test reports and not to replace them.
- The conclusions of this assessment may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.
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