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REGULATORY INFORMATION REPORT

Fire hazard properties of plywood for use as internal wall and ceiling linings in accordance with AS 5637.1:2015

Client: Forest and Wood Products Australia Limited

Job number: 45981 Issuing consultant: Tanmay Bhat

Date: 23 July 2019 Revision: R10.0

DOCUMENT REVISION STATUS

Date Issued	Issue No	Description
25/09/06	45981.1	Initial Issue
9/04/10	45981.2	Revised to include various adhesives and additional species
4/05/10	45981.3	Typographical amendment
7/7/10	45981.4	Typographical amendment
12/03/15	45981.5	Reviewed and revalidated for a further five years and reference Spec C1.10a replaced with C1.10.
9/04/15	45981.6	Amended report sponsor details
29/07/2016	45981.7	Amended referenced report sponsor details
09/08/2016	45981.8	Revised to include reference to Specification C1.10 of NCC 2015 Volume 1
24/06/2019	45981.9	Revised to comply with AS 5637.1:2015
23/07/2019	45981.10	Minor typographical amendments to Sections 4 and 5.

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GENERAL CONDITIONS OF USE

CONTENTS

1 INTRODUCTION

This report contains the minimum information sufficient for regulatory compliance and refers to the assessment report EWFA 45981.9. The referenced report was prepared at the request of Forest and Wood Products Australia Limited (FWPA) as an assessment on the fire hazard properties of plywood for use as wall and ceiling linings. The assessment is undertaken in accordance with requirements of AS 5637.1:2015.

The tested systems are described in Section 2 and are subject to the proposed variations described in Section 3. The conclusions of the report are summarised in Section 5.

The validity of this assessment is conditional on compliance with Sections 7, 8 and 9 of this report.

2 TESTED PROTOTYPES

The referenced assessment report is based on the reports summarised in Tables 1 and 2 referring to tests in accordance with AS/NZS 3837:1998 on various solid and plywood timber.

Table 1 – Referenced Test Reports – Solid Timber

WFRA 499163j	WFRA 499163f	WFRA 499163t	WFRA 499140f
WFRA 499163b	WFRA 499163k	WFRA 499182l	WFRA 499163q
WFRA 499240d	WFRA 499140d	WFRA 499163r	WFRA 499182k
WFRA 499163i	WFRA 499163s	WFRA 499163d	WFRA 499182e
WFRA 499240b	WFRA 499182n	WFRA 499163p	WFRA 499163n
WFRA 499163h	WFRA 499163e	WFRA 499182j	WFRA 499182h
WFRA 499140a	WFRA 499240c	WFRA 499182b	WFRA 499240n
WFRA 499163l	WFRA 499163c	WFRA 499163u	WFRA 499240a
WFRA 499163v	WFRA 499163g	WFRA 499182m	WFRA 499182i
WFRA 499140e	WFRA 499182c	WFRA 499182d	FH4384
WFRA 499182f	WFRA 499140b	WFRA 499163a	FH4385
WFRA 499182g	WFRA 499163o	WFRA 499140c	FH4389
FH4391	FH4392	FH4393	FH4394
FH4390			

Table 2 – Referenced Test Reports - Plywood

Report	Species	Thickness
WFRA 499240Ej	Lauan - *Shorea agsaboensi*	3.6mm
WFRA 499240F	Pine, Radiata – *Pinus radiata*	7.3mm
19-001520	Hoop plywood, Phenol-formaldehyde (PF) adhesive	9mm
19-001522	Hoop plywood, Melamine Urea Formaldehyde (MUF) adhesive	9mm
19-001523	Hoop plywood, Urea Formaldehyde (UF) adhesive	9mm

.

Table 3 – Referenced Test Reports – MDF with Adhesive

Report	Species	Thickness
FH4386	Medium Density Fibreboard (MDF) + Polyvinyl acetate (PVA) Adhesive	6.5mm
FH4387	Medium Density Fibreboard (MDF) + Polyurethane (PU) Adhesive	6.5mm
FH4388	Medium Density Fibreboard (MDF)+ Resorcinol Adhesive	6.5mm

3 VARIATION TO TESTED PROTOTYPES

3.1 INCREASE IN THICKNESS OF PLYWOOD FOR WALL AND CEILING LININGS

It is proposed that the plywood species shown in Table 2 may be used at a minimum thickness of 6mm.

3.2 APPLICATION OF TESTED TIMBER SPECIES AS PLYWOOD

It is proposed that the solid timber species shown in Table 1 may be used to manufacture plywood with a minimum thickness of 6 mm.

3.3 APPLICATION OF VARIOUS ADHESIVES TO THE CONSTRUCTION OF PLYWOOD

The following adhesives may be used to manufacture plywood:

- Polyvinyl acetate (PVA)
- Resorcinol
- Phenol formaldehyde (PF)
- Melamine urea-formaldehyde (MUF)
- Urea-formaldehyde (UF)

4 REFERENCED TEST PROCEDURES

This assessment is undertaken in accordance with requirements of AS 5637.1:2015. Group numbers for plywood are determined from the prediction method and are based on the heat release data obtained from cone testing in accordance with AS/NZS 3837:1998. Good correlation exists between the small-scale cone tests and full-scale room burns for plywood.

5 FORMAL ASSESSMENT SUMMARY

Based on the discussion presented in Appendix B of the referenced report, it is the considered opinion of this test authority that if the tested specimens described in Section 2 had been configured as described in Section 3, they will likely achieve the performance stated below if tested in accordance with AS 5637.1:2015.

Table 4 – List of Plywood Species Assessed

Species	Minimum Thickness (mm)	Group No.	Average Specific Extinction Area (m^2/kg)
Ash, Alpine - *Eucalyptus delegatensis*	6	3	<250
Ash, Mountain – *Eucalyptus regnans*	6	3	<250
Ash, Silvertop - *Eucalyptus sieberi*	6	3	<250
Beech Myrtle - *Northofagus cunnighamii*	6	3	<250
Blackbutt - *Eucalyptus pilularis*	6	3	<250
Blackbutt, New England - *Eucalyptus andrewsii*	6	3	<250
Blackbutt, WA - *Eucalyptus pantens*	6	3	<250
Blackwood - *Acacia melanoxylon*	6	3	<250
Bloodwood Red - *Corymbia gummifera*	6	3	<250
Box, Brush - *Lopehostman confertus*	6	3	<250
Box, Grey – *Eucalyptus microcarpa*	6	3	<250
Box, Grey, Coast – *Eucalyptus bosistoana*	6	3	<250
Brownbarrel - *Eucalyptus fastigata*	6	3	<250
Gum, Blue, Sydney - *Eucalyptus saligna*	6	3	<250
Gum, Blue, Southern (TAS) - *Eucalyptus globulus*	6	3	<250
Gum, Blue, Southern (VIC) - *Eucalyptus globulus*	6	3	<250
Gum, Manna - *Eucalyptus viminalis*	6	3	<250
Gum, Red, River - *Eucalyptus camaldulensis*	6	3	<250
Gum, Rose – *Eucalyptus grandis*	6	3	<250
Gum, Shining – *Eucalyptus nitens*	6	3	<250
Gum, Spotted - *Corymbia maculata*	6	3	<250
Gum, Sugar - *Eucalyptus cladocalyx*	6	3	<250
Gum, Yellow - *Eucalyptus leucoxylon*	6	3	<250
Ironbark, Grey – *Eucalyptus drepanophylla*	6	3	<250
Ironbark, Red - *Eualyptus sideroxylon*	6	3	<250
Jarrah - *Eucalyptus marginata*	6	3	<250
Karri - *Eucalyptus diversicolor*	6	3	<250
Mahogany, Red - *Eucalyptus resinifera*	6	3	<250

Species	Minimum Thickness (mm)	Group No.	Average Specific Extinction Area (m^2/kg)
Marri - *Eucalyptus callophylla*	6	3	<250
Merbau - Instia bijuga	6	3	<250
Messmate - *Eucalyptus oblique*	6	3	<250
Oak, American - *Quercus abla*	6	3	<250
Pine, Baltic - *Picea abies*	6	3	<250
Pine, Hoop - *Araucaria cunninghamii*	6	3	<250
Pine, Radiata – *Pinus radiata*	6	3	<250
Pine, Radiata – *Pinus radiata (CCA Treated)*	6	3	<250
Pine, White Cypress - *Callitris glaucophylla*	6	3	<250
Rosewood, Papua New Guinea - *Pterocarpus indicus*	6	3	<250
Sheoak, WA - *Allocosuarina fraseriana*	6	3	<250
Stringy Bark, Yellow - *Eucalyptus muellerana*	6	3	<250
Tallowwood - *Eucalyptus microcorys*	6	3	<250
Turpentine – *Syncarpa glomulifera*	6	3	<250
Walnut, Black (American Wallnut) - *Juglans nigra*	6	3	<250
Wattle, Silver – *Acacia dealbata*	6	3	<250
Western Red Cedar – *Thuja plicata*	6	3	<250

6 DIRECT FIELD OF APPLICATION

This assessment applies to internal wall and ceiling linings of Class 2-9 buildings that are required to have fire hazard properties in accordance with Building Code of Australia NCC 2019 Volume 1 Specification C1.10.

7 REQUIREMENTS

This report details the methods of construction, test conditions and assessed results that would be expected had the specific elements of construction described herein been tested in accordance with AS 5637.1:2015.

Any further variations with respect to size, constructional details, edge or end conditions, other than those identified in this report, may invalidate the conclusions drawn in this report.

8 VALIDITY

This report does not provide an endorsement by Warringtonfire Aus Pty Ltd of the actual products supplied.

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 conditions.

Because of the nature of fire testing, and the consequent difficulty in quantifying the uncertainty of measurement, it is not possible to provide a stated degree of accuracy. The inherent variability in test procedures, materials and methods of construction, and installation may lead to variations in performance between elements of similar construction.

The assessment can therefore only relate to the actual prototype test specimens, testing conditions, and methodology described in the supporting data, and does not imply any performance abilities of constructions of subsequent manufacture.

This assessment is based on information and experience available at the time of preparation. The published procedures for the conduct of tests and the assessment of test results are the subject of constant review and improvement and it is recommended that this report be reviewed on or, before, the stated expiry date.

The information contained in this report shall not be used for the assessment of variations other than those stated in the conclusions above. The assessment is valid provided no modifications are made to the systems detailed in this report. All details of construction should be consistent with the requirements stated in the relevant test reports and all referenced documents.

9 AUTHORITY

9.1 APPLICANT UNDERTAKINGS AND CONDITIONS OF USE

By using this report as evidence of compliance or performance the applicant(s) confirms that:

- to their knowledge the component or element of structure, which is the subject of this assessment, has not been subjected to a fire test to the Standard against which this assessment is being made, and
- they agree to withdraw this assessment from circulation should the component or element of structure be the subject of a fire test by a test authority in accordance with the Standard against which this assessment is being made and the results are not in agreement with this assessment, and
- they are not aware of any information that could adversely affect the conclusions of this assessment and if they subsequently become aware of any such information, agree to ask the assessing authority to withdraw the assessment.

9.2 GENERAL CONDITIONS OF USE

This report may only be reproduced in full without modifications by the report sponsor. Copies, extracts or abridgments of this report in any form shall not be published by other organisations or individuals without the permission of Warringtonfire Aus Pty Ltd.

9.3 AUTHORISATION ON BEHALF OF EXOVA WARRINGTONFIRE AUS PTY LTD

Prepared by:	Reviewed by:	Authorized by:
		
Tanmay Bhat	Omar Saad	Omar Saad

9.4 DATE OF ISSUE

23/07/2019

9.5 EXPIRY DATE

31/05/2024