INFRASTRUCTURE TECHNOLOGIES
www.csiro.au

Bushfire performance of Jarrah and Karri Hardwood enclosed decks in accordance with AS 1530.8.1 - 2007

Short Form Assessment Report

Author: **Keith Nicholls**

Report number: Short Form FCO 3593 Revision A

Date: 9/7/2025

Client: Forest and Wood Products Australia Limited

Inquiries should be addressed to:

Fire Testing and Assessments	Author	The Client
NATA Accredited Test Laboratory 14 Julius Avenue North Ryde, NSW 2113	Infrastructure Technologies 14 Julius Avenue North Ryde, NSW 2113 Telephone +61 2 9490 5450	Forest and Wood Products Australia Limited Suite 6.03, Level 6 36 Wellington Street Collingwood VIC 3061 Telephone 0407 874 901

Report Details:

Report CSIRO Reference number: FCO 3593/CO5909

Report Status and Revision History:

VERSION	STATUS	DATE	DISTRIBUTION	ISSUE NUMBER
Initial Issue	Final	30/5/2025	CSIRO/Client	Short Form FCO 3593
Revision A	Final	9/7/2025	CSIRO/Client	Short Form FCO 3593

Report Authorization:

AUTHOR	REVIEWED BY	AUTHORISED BY
Keith Nicholls	**Jing Xu**	**Keith Nicholls**
		
9/7/2025	9/7/2025	9/7/2025

Copyright and disclaimer

Important disclaimer

Contents

1 Introduction

This report refers to an assessment report FCO-3593 titled “Bushfire attack level (BAL) performance of Jarrah and Karri Hardwood enclosed decks in accordance with AS 1530.8.1 – 2007”.

This report is prepared for meeting the requirements of AS 3959-2018 clause 3.8 and NCC 2022 Volume 2 Clause A5G3 1(d) as appropriate for the required Bushfire Attack Level (BAL) performance.

This report reviews and confirms the extent to which the reference fire tests listed in section 2 meet the requirements of the standard fire test standards listed in section 4 of the report. The proposed variations to the tested construction presented in section 3 are subject to analysis in Appendix B in the referenced report and the conclusions are presented in Section 5 of this report.

The field of applicability of the results of this assessment report is presented in Section 6 and subject to the requirements, validity and limitations of Sections 7, 8 and 9.

2 Supporting Data

This assessment report refers to various test reports to support the analysis in the referenced report and conclusions of this report. They are listed below.

Report Reference	Test Standard	Outline of Test Specimen
EWFA 30707100.1	AS 1530.8.1-2007	Full scale bushfire deck test of Jarrah Hardwood decking boards
EWFA 30993000.1	AS 1530.8.1-2007	Full scale bushfire deck test of Karri Hardwood decking boards

The referenced test was as carried out at Exova Warringtonfire, Victoria and were sponsored by Forest and Wood Products Australia Limited.

3 Proposed Minor Variations

The proposed construction shall be enclosed decks as tested in EWFA 30707100.1 and EWFA 30993000.1 and subject to the following variations:

- Deck floor area may be unlimited.
- Decking thickness may be 20mm or greater.
- Decking may be of Karri or Jarrah.
- Deck framing(Joists and bearers) may be of treated Radiata Pine, Jarrah or Karri.
- Joists can include aluminium flashing on top edge or be installed without flashing.
- Frame supporting the decking may be increased in width and depth.
- Wall cladding construction shall be non-combustible and in accordance with AS 3959-2018 such as masonry, concrete, AAC, mud brick.

Table 1: Components of decking system

Item No.	Item name	Detail
1	**Karri or Jarrah Hardwood decking boards**	**Size** 85mm wide x 20mm thick pencil round four corners **Density** Karri Hardwood – Min. 933 Kg/m³ Jarrah Hardwood – Min. 975 Kg/m³ **Fixing** 2 x 50mm x 18GA Brad Nails every joist located 25mm from each edge of the board
2	**Joists and bearers**	**Material** MGP 10 Radiata pine (Min. 540 Kg/m³), Jarrah (Min. 975 Kg/m³) or Karri (Min. 933 Kg/m³) **Size** Min. 90mm x Min. 45mm
3	**Non-combustible wall system**	Wall system comprised of cladding construction in accordance with AS 3959 - 2018 with following materials: • Min. 6mm thick Fibre cement • Min. 90mm thick double skin masonry • Min. 90mm thick masonry veneer • Min. 90mm thick mud brick • Min. 90mm thick concrete • Min. 90mm thick double skin masonry • Min. 100mm thick Aerated concrete veneer (AAC) • Min. 75mm thick Aerated concrete veneer (AAC) tested in accordance with AS 1530.4-2014 with an established FRL of at least -/30/30.
4	Optional **Aluminium Flashing**	Optional Aluminium Flashing 750mm wide x 750mm long x 0.3mm thick laid on joists, between joists and decking with flashing extending 15mm down the sides of the joists.

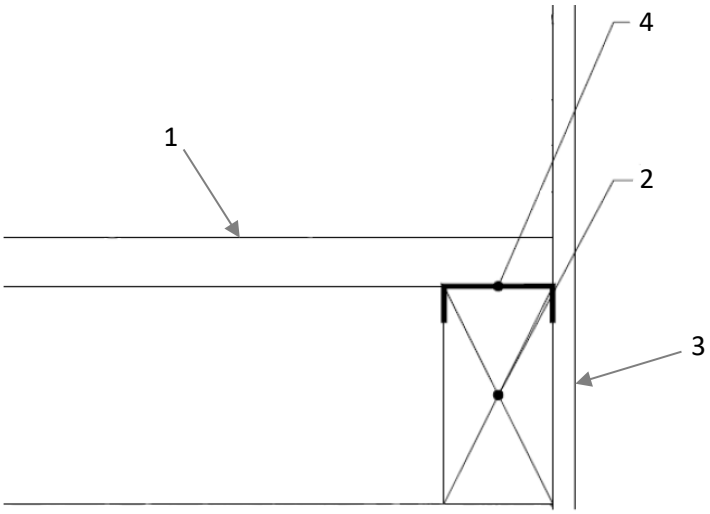

Figure 1 – Deck Framing joists with Aluminium flashing

4 Referenced Standards

Standards:

AS 1530.8.1-2007	Methods for fire tests on building materials, components and structures, Part 8: Tests on elements of construction for buildings exposed to simulated bushfire attack-Radiant heat and small flaming sources, Section 21: Decks
AS 3959-2018	Construction of buildings in bushfire-prone areas

5 Conclusion

On the basis of the analysis presented in the referenced report, it is the opinion of this Accredited Testing Laboratory that the tested prototypes described in Section 2 when varied as described in Section 3 will achieve the Bushfire Attack Level (BAL) stated below when submitted to a standard fire test in accordance with the test methods referenced in Section 4 and subject to the requirements of section 7, validity of section 8 and limitation of section 9.

BAL : A29

6 Direct Field of Application of Results

The application of the results of decking systems when exposed to fire on the tested side.

7 Requirements

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

8 Term of Validity

This assessment report will lapse on 31st May 2030. Should you wish us to re-examine this report with a view to the possible extension of its term of validity, would you please apply to us three to four months before the date of expiry. This Division reserves the right at any time to amend or withdraw this assessment in the light of new knowledge.

9 Limitations

The conclusions of this assessment report may be used to directly assess the fire performance under such conditions, but it should be recognised that a single test method will not provide a full assessment of the fire hazard under all fire 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.

This assessment report does not provide an endorsement by CSIRO of the actual products supplied to industry. The referenced 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 is reviewed on or, before, the stated expiry date.

The information contained in this assessment 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

CONTACT US

t 1300 363 400
+61 3 9545 2176
e enquiries@csiro.au
w www.csiro.au

YOUR CSIRO

Australia is founding its future in science and innovation. Its national science agency, CSIRO, is a powerhouse of ideas, technologies and skills for building prosperity, growth, health and sustainability. It serves governments, industries, business and communities across the nation.

FOR FURTHER INFORMATION

Infrastructure Technologies
Keith Nicholls
Group Leader, Fire Testing and Assessments
t +61 2 9490 5450
e keith.nicholls@csiro.au
w https://research.csiro.au/infratech/fire-safety/fire-testing/

Infrastructure Technologies
Jing Xu
Senior consultant, Fire Assessments
t +61 2 9490 8041
e jing.xu@csiro.au
w https://research.csiro.au/infratech/fire-safety/fire-testing/