



PROFESSIONAL FIRE SAFETY TESTING

t: (02) 6111 2909 | ABN: 36 620 256 617
mail@ignislabs.com.au | www.ignislabs.com.au
3 Cooper Place, Queanbeyan, NSW 2620
PO Box 5174 Braddon ACT 2612

Pavezzi Resisto Decking

**PRODUCT BAL29 TESTING
REPORT
AS 1530.8.1 - 2018**

IGNL-9295-16R I01 R00 D02

Tested: 27.08.2025

Issued: 08.10.2025



DOCUMENT REVISION HISTORY

| Issue | Revision | Date | Purpose of Issue | Prepared by | Reviewed by |
|-------|----------|------------|---------------------------------|-------------|-------------|
| 01 | 00 D01 | 08.09.2025 | Issued internally for review | NC | JY |
| 01 | 00 D02 | 08.10.2025 | Issued to the client for review | NC | JY |
| | | | | | |
| | | | | | |
| | | | | | |

CLIENT

Pavezzi Composites Pty Ltd
142-150 Cooper Street
Epping, VIC 3076

Test Technicians

Darren Laker
Laboratory Supervisor

Jessica Ying | MIEAust
Laboratory Engineer

SIGNATORY

Authorised by

Benjamin Hughes-Brown | FIEAust CPEng NER APEC Engineer IntPE(Aus)

Chartered Professional Engineer

CPEng, NER (Fire Safety / Mech) 2590091, RPEQ 11498, BDC-1875, PRE0000303, DEP0000317, PE0001872
MFireSafety (UWS), BEng (UTS), GradDipBushFire (UWS), DipEngPrac (UTS), DipEng (CIT)

CONTACT INFORMATION

Ignis Labs Pty Ltd

t: (02) 6111 2909 | ABN: 36 620 256 617

mail@ignislabs.com.au | www.ignislabs.com.au

3 Cooper Place, Queanbeyan, NSW 2620

PO Box 5174 Braddon ACT 2612

Copyright ©

All rights reserved. This report may only be reproduced in full without modifications by the report sponsor. No part of the content of this document may be reproduced, published, transmitted or adapted in any form or by any means without the written permission of Ignis Labs Pty Ltd.

Disclaimer

The information contained in this document is provided for the sole use of the recipient and no reliance should be placed on the information by any other person. In the event that the information is disclosed or furnished to any other person, Ignis Labs Pty Ltd accepts no liability for any loss or damage incurred by that person whatsoever as a result of using the information.



CONDITIONS AND LIMITATIONS

This assessment report does not provide an endorsement by Ignis Labs Pty Ltd of the actual product evaluated.

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 hazards 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 relate only to the actual prototype test specimens, testing conditions and methodology described in the referenced documents, 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.

This report is prepared in good faith and with due care for information purposes only, and should not be relied upon as providing any warranty or guarantee. In particular, attention is drawn to the nature of the inspection and investigations undertaken and the limitations these impose in determining with accuracy the state of the building, its services or equipment and life safety.

Ignis Labs' involvement in the Project is limited to the role outlined in section 2 'Scope of Service' of the Letter. This report reflects that role. Any reliance on, or use of, this report for purposes outside the scope of service is at the user's own risk.

Ignis Labs shall not be held liable for any loss or damage resulting from any defect of the building or its services or equipment or for any non compliance of the building or its services or equipment with any legislative or operational requirement, whether or not such defect or non-compliance is referred to or reported upon in this report, unless such defect or non-compliance should have been apparent to a competent engineer undertaking the evaluation of the type undertaken for the purpose of preparation of this report.

Ignis Labs has carefully reviewed and applied to the best of our ability the requirements of local Legislation, the NCC and the International Fire Engineering Guidelines.



TABLE OF CONTENTS

| | | |
|----------|--|-----------|
| 1 | INTRODUCTION | 5 |
| 1.1 | General | 5 |
| 1.2 | Subject Test Specimen | 5 |
| 1.3 | Sponsor | 5 |
| 1.4 | Manufacturer | 5 |
| 1.5 | Test Number | 5 |
| 1.6 | Test date | 5 |
| 2 | DESCRIPTION OF SPECIMEN | 6 |
| 2.1 | General | 6 |
| 2.2 | Schedule of components | 6 |
| 2.3 | Selection, construction and installation of the specimen | 8 |
| 3 | INSTRUMENTATION AND EQUIPMENT | 9 |
| 3.1 | Radiant heat source | 9 |
| 3.2 | Timber crib | 9 |
| 3.3 | Pilot ignition source | 9 |
| 3.4 | Gap gauge | 9 |
| 3.5 | Heat flux | 9 |
| 3.6 | Temperature | 9 |
| 3.7 | Measurement System | 10 |
| 4 | TEST PROCEDURE | 11 |
| 4.1 | Statement of Compliance | 11 |
| 4.2 | Variations to the Method | 11 |
| 4.3 | Pre-test Conditioning | 12 |
| 4.4 | Ambient Temperature | 12 |
| 4.5 | Test Duration | 12 |
| 5 | TEST RESULTS | 12 |
| 5.1 | Critical Observations | 12 |
| 5.2 | Bushfire radiant heat test profiles | 15 |
| 5.3 | Specimen Temperature | 16 |
| 5.4 | Performance | 17 |
| 6 | APPLICATION OF TEST RESULTS | 18 |
| 6.1 | Test Limitations | 18 |
| 6.2 | Variations from the Tested Specimen | 18 |
| 6.3 | Uncertainty of Measurement | 18 |



1 INTRODUCTION

1.1 General

The purpose of this report is to document Pavezzi Ressisto Decking provided by Pavezzi Composites Pty Ltd undertaken by Ignis Labs. The testing was undertaken in accordance with AS 1530.8.1 – 2018 to BAL 29 conditions.

1.2 Subject Test Specimen

The test sponsor described the test specimen as Ressisto 138 decking. It is composed of 60 % wood fibre, 20 % HDPE, 15% Talcum powder and 5% additives. The decking boards are 138 mm wide by 23 mm thick and are installed with powder coated stainless steel clips providing a 3 mm spacing between adjacent boards. The specimen has an end use as residential and commercial decking.

The specimen was received as decking boards with one brown face and one grey face. The boards had measured dimensions of 995 mm in length, 137.39 mm in width, and 23.08 mm in thickness. Each board featured grooves along the long edge with measured dimensions of 2.01 mm in depth by 7.53 mm in width. Additionally, six cylindrical holes, each with a measured diameter of 13.26 mm, extended continuously along the entire length of the board. The decking boards were installed by using the slim metal clips and start and finish clips to maintain 3 mm spacings.

FIGURE 1:

SPECIMEN RECEIVED



1.3 Sponsor

Pavezzi Composites Pty Ltd

142-150 Cooper Street

Epping, VIC 3076

1.4 Manufacturer

No manufacturer information was provided

1.5 Test Number

The Ignis Labs reference test number is IGNL-9295-16.

1.6 Test date

The BAL 29 test was conducted on 27 August 2025.



2 DESCRIPTION OF SPECIMEN

2.1 General

The test sponsor described the test specimen as Ressisto 138 decking. It is composed of 60 % wood fibre, 20 % HDPE, 15% Talcum powder and 5% additives. The decking boards are 138 mm wide by 23 mm thick and are installed with powder coated stainless steel clips providing a 3 mm spacing between adjacent boards. The specimen has an end use as residential and commercial decking.

The specimen was received as decking boards with one brown face and one grey face. The boards had measured dimensions of 995 mm in length, 137.39 mm in width, and 23.08 mm in thickness. Each board featured grooves along the long edge with measured dimensions of 2.01 mm in depth by 7.53 mm in width. Additionally, six cylindrical holes, each with a measured diameter of 13.26 mm, extended continuously along the entire length of the board.

The specimen was fabricated to the test dimensions by Ignis Labs. The boards were installed with the provided clips, with an approximately 3 mm gap between the boards. The boards were installed parallel to the main wall of the test rig, with the brown face oriented upwards. 10G 16 mm Metal Tek Screws were used instead of the provided wood screws as the boards were fixed to the metal frame in the test rig. The clips were positioned 80 mm from the end of the boards with a 440 mm spacing between the two clips. The final board was cut to a width of 48 mm and slotted in accordance with the installation guide.

2.2 Schedule of components

| Component | Description | |
|-------------|--------------|---|
| Deck | | |
| 1 | Name | Pavezzi Ressisto Decking |
| | Description | The test sponsor described the test specimen as Ressisto 138 decking. It measured 995 mm long, 137.39 mm wide and 23.08 mm thick. The decking panels were fabricated to be a decking specimen system having a measured length of 600 mm and a measured width of 753 mm. |
| | Location | Main components of the decking |
| | Installation | Applied C2 and C3 between adjacent boards to maintain a 3 mm gap. |
| 2 | Name | Slim Metal Clip |
| | Description | 40 mm by 36 mm powder coated stainless steel clips |
| | Location | In between boards of C1 |
| | Installation | Fixed via F1 to the testing rig substrate |
| 3 | Name | Start and Finish Clip |
| | Description | 28 mm by 25 mm powder coated stainless steel clips |
| | Location | In between boards of C1 |



| | | |
|---|--------------|---|
| | Installation | Fixed via F1 to the test rig substrate |
| External Wall (As per AS 3959 – 2018 Clause 8.4.1) | | |
| 4 | Name | Decking Support Steel Frame |
| | Description | The steel frame was constructed by C channel frame with a size of 450 H × 750 D × 600 W mm to support specimen and 92 mm track and stud frame that were used to support fibre cement wall and eave. |
| | Location | Structural framing under deck and behind FC wall |
| | Installation | Screw fixed with F1 |
| 5 | Name | Sarking – Tyvek Homewrap |
| | Description | White synthetic building wrap with blue and red printing. |
| | Location | It was applied behind exposed face of wall. |
| | Installation | F2 were used to apply sarking to the wall steel frame. |
| 6 | Name | Insulation |
| | Description | 75 mm Knauf R2.0 Earthwool insulation |
| | Location | It was applied inside of the wall frame. |
| | Installation | Press fit. |
| 7 | Name | Wall Steel Frame |
| | Description | The steel frame was constructed by C channel frame to support fibre cement wall and eave. |
| | Location | Structural framing behind FC wall |
| | Installation | Screw fixed |
| 8 | Name | Fibre Cement |
| | Description | One layer of fibre cement with a thickness of 6 mm. |
| | Location | On the exposed face |
| | Installation | Fixed with F3. |
| 9 | Name | Fyrchek Plasterboard |
| | Description | 13 mm Fyrchek Plasterboard |
| | Location | On the unexposed face |
| | Installation | Fixed with F4. |
| Fixings | | |
| 1 | Name | 10G 16 mm Metal Tek screws |
| | Description | 10G 16 mm Metal Tek screws |
| 2 | Name | Tyvek tape |
| | Description | Tyvek tape |



| | | |
|---|-------------|---|
| 3 | Name | 50 mm 10G Countersunk Phillips Head Metal Tek Screws |
| | Description | 50 mm 10G countersunk Phillips head metal tek screws |
| 4 | Name | 50 mm 10G Hex Head Metal Tek Screws |
| | Description | 50 mm 10G hex head metal tek screws |

FIGURE 2:

SPECIMEN FABRICATION



SPECIMEN FABRICATION



FIGURE 3:

SPECIMEN FABRICATION



SPECIMEN FABRICATION



2.3 Selection, construction and installation of the specimen

Ignis Labs was not involved in the selection of the specimen. Ignis Labs was opted to fabricate the specimen to the external wall and the test equipment. The external wall was constructed by Ignis Labs in accordance with the Clause 8.4.1 of AS 3959-2018.



3 INSTRUMENTATION AND EQUIPMENT

3.1 Radiant heat source

The furnace had a nominal size of 1 m x 1 m with a sheet steel closure forming a radiant heat source. The furnace was lined with refractory bricks and materials with thermal properties as specified in AS 1530.4:2014 and was heated by combustion of a mixture of natural gas and air.

3.2 Timber crib

Class AA test crib was prepared and used in this test in accordance with Clause 14.2 of AS 1530.8.1-2018. The crib was conditioned in an oven with temperature of between 40 °C and 50 °C for 24 hrs. It was removed from oven 60 minutes prior to testing. The crib was exposed to the flame of an oxy/acetylene type burner with a Type 551 Size 8 x 10 heating tip for 5 minutes, during which time they were rotated that expose each face for 30 seconds.

One crib was located at a rebate corner on the upper surface of the deck.

3.3 Pilot ignition source

A pilot ignitor with 25 mm long gas flame was available during the whole test.

3.4 Gap gauge

A 3 ± 0.1 mm diameter gap gauge was available during the test for assessing the ember penetration.

3.5 Heat flux

Two water-cooled radiometers complying with the requirements in Table 11.1 of AS 1530.8.1-2018 were used in the test with appropriate mountings. One control radiometer was mounted in the front face of the deck, and a second radiometer was fitted at the centre of the wall in accordance with Clause 21.3 of AS 1530.8.1-2018.

3.6 Temperature

The temperature in the furnace chamber was measured by two type K, 3-mm diameter, 310 stainless steel Mineral Insulated Metal Sheathed (MIMS) thermocouples. Each thermocouple was housed in high-nickel steel tubes.

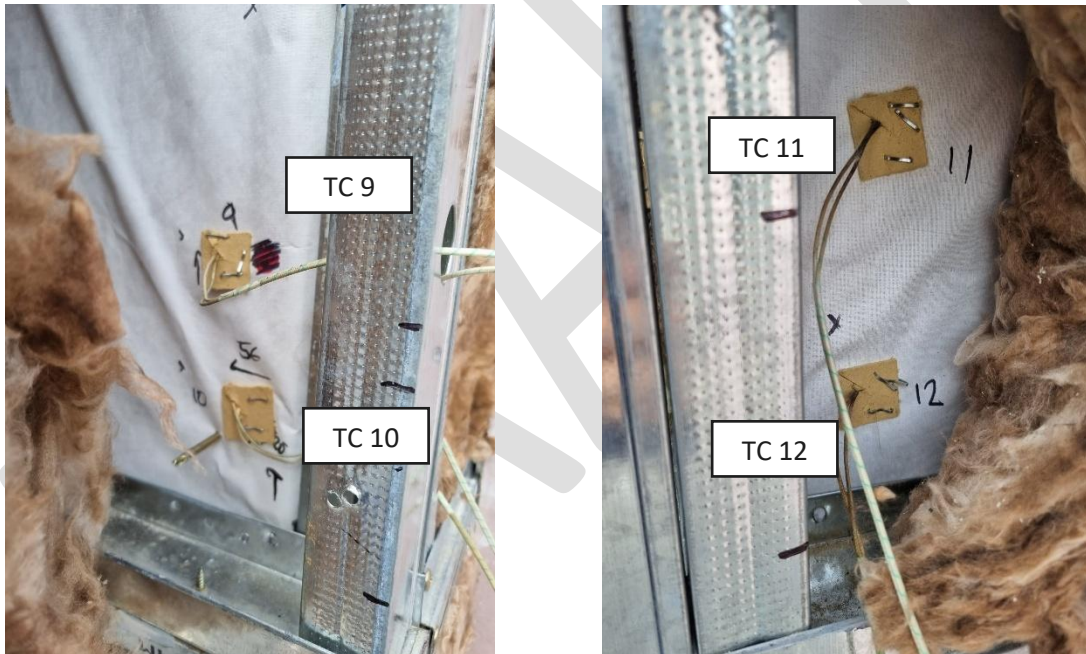
The temperature of the specimen including the joints was measured by glass-fibre insulated and sheathed K-type thermocouples with a wire diameter of 0.5mm.

Locations of the thermocouples on the unexposed face of the specimen are detailed below.

FIGURE 4:
THERMOCOUPLE INSTALLATION ON TOP CAVITY



FIGURE 5:
THERMOCOUPLE INSTALLATION ON THE BACK CAVITY ON SIDE CAVITY



3.7 Measurement System

The thermocouple temperatures were recorded by a Graphtec Corporation GL840 Multichannel data logger.

4 TEST PROCEDURE

4.1 Statement of Compliance

The test was performance in accordance with the requirements of AS 1530.8.1-2018 with the purpose of determining the performance of external construction elements when exposed to radiant heat, burning embers and burning debris.

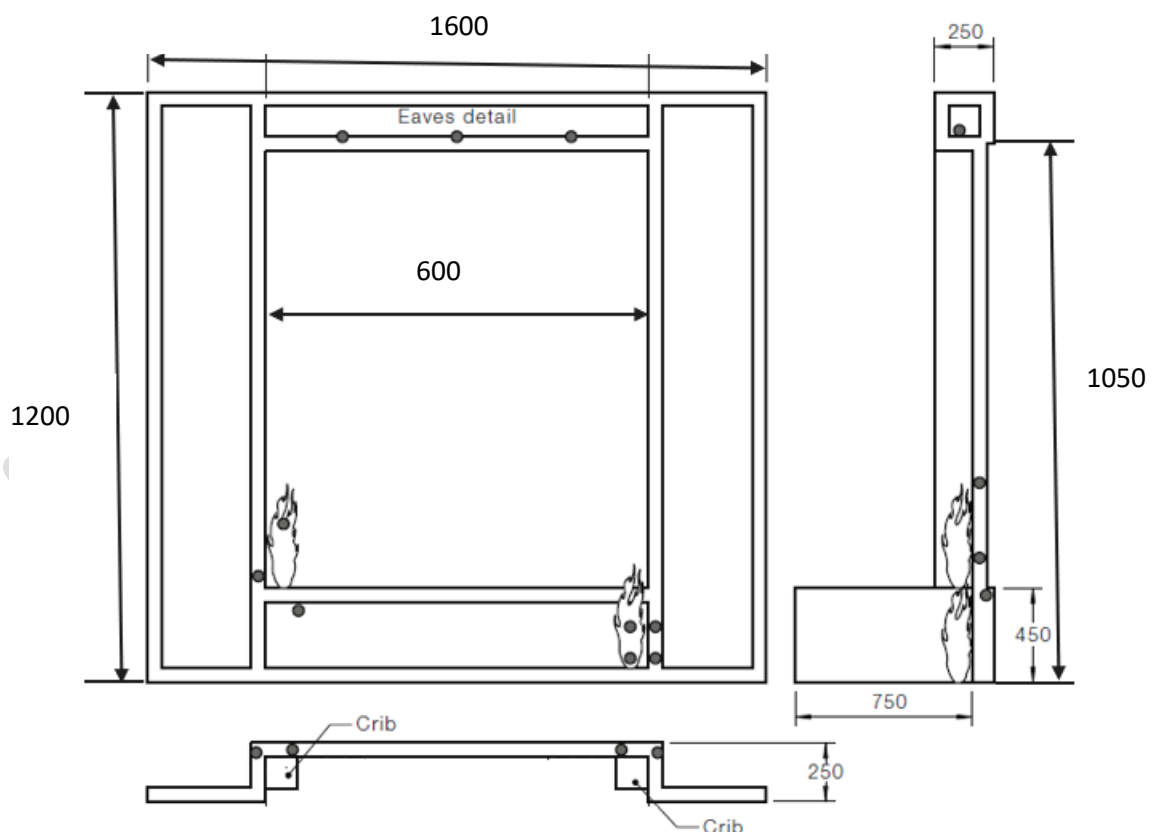
4.2 Variations to the Method

The radiant heat source was the furnace for pilot fire-resistance tests of AS 1530.4 that has a nominal size of 1 m × 1 m with a sheet steel closure.

The external wall was built to have rebate in the centre of the specimen with an eaves detail being 600 mm. The specimen deck was fabricated to fit the rebate of the external wall. The thermocouples on the eaves detail are 1050 mm above the ground. The test configuration for deck assemblies was shown below.

FIGURE 6:

THE TEST CONFIGURATION FOR DECK ASSEMBLIES (NO CRIB WAS PLACED UNDER THE DECKING)



LEGEND:

● = Incipient fire spread thermocouples

Note: In this test, the second crib at the bottom is not applied.



4.3 Pre-test Conditioning

Prior to construction, the components of the wall system were subjected to normal temperatures and humidity. The sample materials were not subjected to any conditioning except for being stored within a dry storage shed prior to installation.

As confirmed by the test sponsor, the specimen is not sensitive to moisture content. Prior to construction, the test specimen was subjected to normal temperatures and humidity until the test date. After installation, test specimen supplied by Preezzi Composites Pty Ltd Pty Ltd and supplied to Ignis Labs and left to cure in a weatherproof environment.

4.4 Ambient Temperature

The temperature of the test area was 14 °C at the commencement of the test.

4.5 Test Duration

The test duration is 60 minutes in accordance with Clause 14.3 of AS 1530.8.1-2018.

5 TEST RESULTS

5.1 Critical Observations

The following observations were made during the fire-resistance test:

| | |
|---------------|---|
| 00:00 minutes | Cribs inserted and test start. |
| 00:45 minutes | Charring was observed on the fibre cement around the crib. |
| 01:00 minutes | Light smoke was observed from the top of the specimen. |
| 02:50 minutes | Crib smouldering. |
| 04:00 minutes | Small melting and bubbling were observed on the front edge of the deck. |
| 07:00 minutes | Light smoke was observed from the crib. |
| 10:00 minutes | Door closed. Light smoke and glowing embers were observed from the crib. |
| 20:00 minutes | Light smoke was observed from the crib and embers were no longer glowing. |
| 60:00 minutes | Test end. |



FIGURE 7:

SPECIMEN 1 MIN INTO THE TEST



SPECIMEN 5 MINS INTO THE TEST



FIGURE 8:

SPECIMEN 10 MINS INTO THE TEST



SPECIMEN 40 MINS INTO THE TEST





FIGURE 9:

END OF THE TEST – 60 MINS



FIGURE 10:

POST TEST SPECIMEN – EXPOSED FACE



POST TEST SPECIMEN – UNEXPOSED FACE - TOP





FIGURE 11:

POST TEST SPECIMEN – UNEXPOSED FACE



POST TEST SPECIMEN – UNEXPOSED FACE



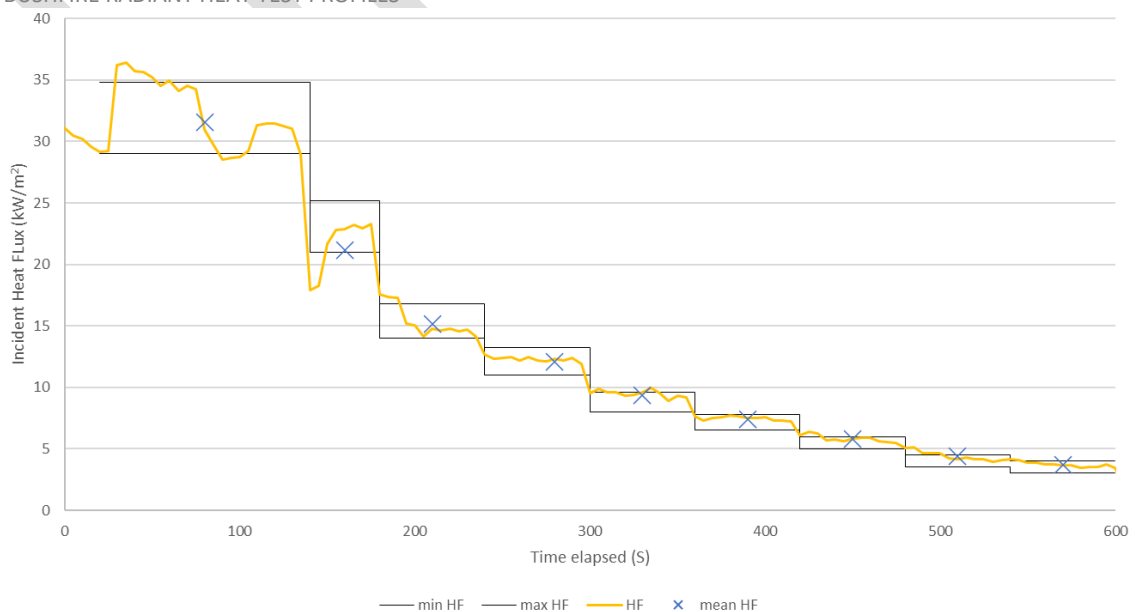
5.2 Bushfire radiant heat test profiles

The furnace temperature and radiant panel was controlled so that the average heat flux, measured at the centre of the panel was maintained within the prescribed radiant heat flux limits in accordance with Table 14.2 of AS 1530.8.1-2018.

The following figure shows the radiant heat test profiles. The mean heat flux measured is within the required range.

FIGURE 12:

BUSHFIRE RADIANT HEAT TEST PROFILES



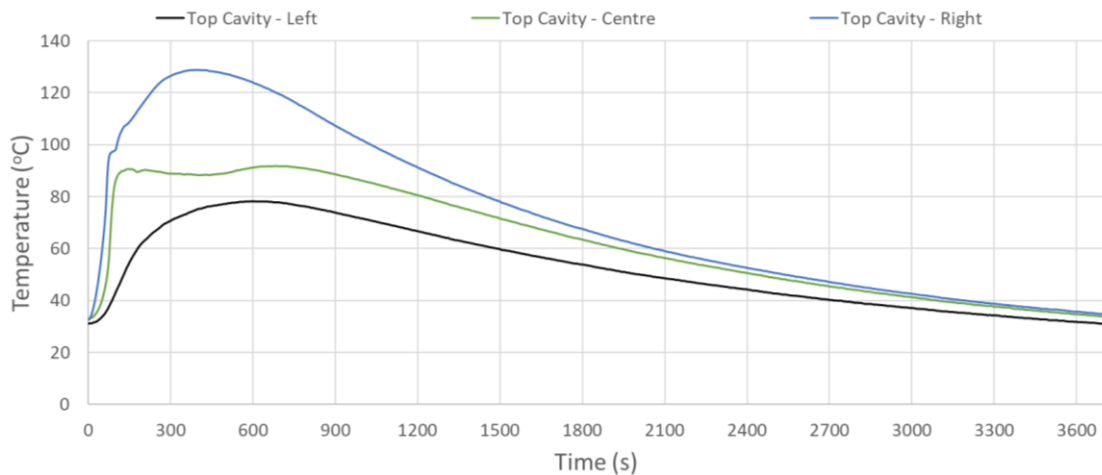


5.3 Specimen Temperature

The specimen temperature was monitored by the thermocouples distributed on the un-exposed face of the test specimen, as shown in Figure 4. All thermocouple temperature at the top cavity are within the mean and maximum temperature limits between 20 minutes and 60 minutes after the commencement of test.

FIGURE 13:

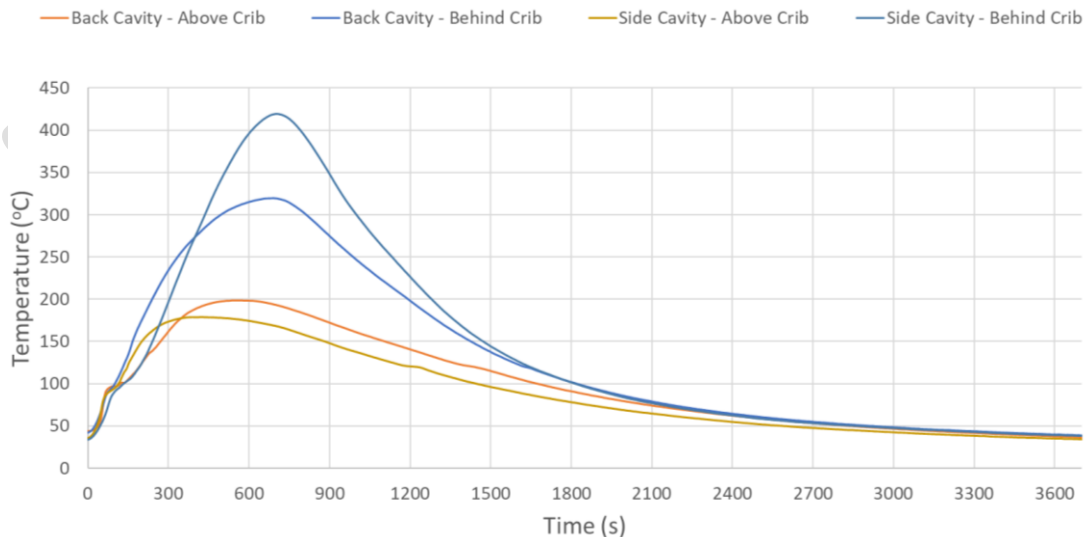
THERMOCOUPLE TEMPERATURES AT THE TOP CAVITY



All thermocouple temperature at the back cavity is within the mean and maximum temperature limits between 20 min and 60 min after commencement of test.

FIGURE 14:

THERMOCOUPLES TEMPERATURES AT THE BACK CAVITY



All thermocouple temperature on the eaves is within the mean and maximum temperature limits between 20 minutes and 60 minutes after the commencement of test.



5.4 Performance

The performance observed in respect of the following AS 1530.8.1-2018 criteria:

| Performance Criteria | Time to failure (min) | Position of failure | |
|--|-----------------------|---------------------|----------------------|
| Formation of through-gaps greater than 3 mm | No failure | - | |
| Sustained flaming for 10 s on the non-fire side | No failure | - | |
| Flaming on the fire-exposed side at the end of the 60 min test period | No failure | - | |
| Radiant heat flux 365 mm from the non-fire side exceeding 15 kW/m ² | No failure | - | |
| Mean and maximum temperature rises greater than 140 K and 180 K | Not applicable | NA | |
| Radiant heat flux 250 mm from the specimen, greater than 3 kW/m ² between 20 min and 60 min | No failure | - | |
| Mean and maximum temperature of internal faces exceeding 250 °C and 300 °C respectively between 20 min and 60 min after commencement of test | No failure | - | |
| Extent of flaming exceeding 500 mm limits on decking boards | No failure | - | |
| Crib class | AA | Peak heat flux | 29 kW/m ² |
| Test Result | | BAL AA29 | |



6 APPLICATION OF TEST RESULTS

6.1 Test Limitations

The results of this fire test 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. The results only relate to the behaviour of the specimen of the element of the construction under the particular conditions of the test, they are not intended to be the sole criteria for assessing the potential fire performance of the element in use nor do they necessarily reflect the actual behaviour in fires.

6.2 Variations from the Tested Specimen

This report details methods of construction, the test conditions and the results obtained when the specific element of construction described herein was tested in accordance with test method of AS 1530.8.1. Any significant variation with respect to size, constructional details, loads, stresses, edge or end conditions, other than those allowed under the field of direct application in the relevant test method, is not covered by this report.

6.3 Uncertainty of Measurement

Because of the nature of fire hazard property testing and the consequent difficulty in quantifying the uncertainty of measurement of fire hazard properties, it is not possible to provide a stated degree of accuracy of the result.

DRAFT



PAGE 19 OF 19
--- END OF REPORT ---
THIS PAGE INTENTIONALLY LEFT BLANK

Ignis Labs Pty Ltd

Laboratory reference No: IGNL-9295-16R

T: (02) 6111 2909

www.ignislabs.com.au

mail@ignislabs.com.au

3 Cooper Place Queanbeyan East NSW 2620

PO Box 5174 Braddon ACT 2612

ABN: 36 620 256 617

