ASSESSMENT REPORT

An assessment of Trex®
Decking boards if tested in accordance with
AS1530.8.1- 2007 Section 21.

Report No:

47368700.1

Report Sponsor:

Trex Company Inc
245 Capitol Lane
Winshester VA 22602 USA

Testing. Advising. Assuring.

DOCUMENT REVISION STATUS

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1 INTRODUCTION

This report presents an assessment of Trex® decking if tested in accordance with AS1530.8.1- 2007 – *Tests on elements of construction for buildings exposed to simulated bushfire attack – Radiant heat and small flaming sources.*

The tested systems are described in Section 2 and are to be subject to the design variations described in Section 3 and tested in accordance with the test method described in Section 4. The conclusions of the report are summarised in Section 5.

The validity of this assessment is conditional on compliance with Sections 6, 7 and 8 of this report. Summaries of the test data on which this assessment is based are provided in the Appendices together with a summary of the critical issues leading to the assessment conclusions including the main points of argument in Appendix B.

2 TESTED PROTOTYPES

This assessment is based on fire resistance test EWFA 2824600.1, EWFA 2824602.1 and EWFA 47551800.1, which comprised a deck system tested in accordance with the appropriate method in AS1530.8.1- 2007 Section 21.

Refer to Appendix A for full summary of the referenced test data.

3 VARIATION TO TESTED PROTOTYPES

The proposed specimen shall be as tested in EWFA 2824600.1, EWFA 2824602.1 and EWFA 47551800.1 and subject to the following variations in the tested construction:

- The adjacent walls shall be constructed from a minimum of 90mm thick masonry, masonry veneer, double brick, mud brick, concrete or, 75mm and 100mm aerated concrete veneer in lieu of the 6mm fibre cement tested, or
- The adjacent walls shall include a layer of 16mm CSR Gyprock Fyrchek plasterboard over clad with either Fibre-cement a minimum of 6mm in thickness, or Steel sheeting, or timber cladding made from one of the following bushfire-resisting timber species

Product	Boards Direction	Proposed variation
Transcend® Square	Parallel or Perpendicular to wall	With or without metal mesh
Transcend® Grooved-edge		Requirement for Metal Mesh and Metal Flashing on timber joists need to be installed
Contour® Groove		With or without metal mesh, Metal Flashing on timber joists need to be installed
Contour® Square		With or without metal mesh

3.1 ASSESSED DECK PROFILES:

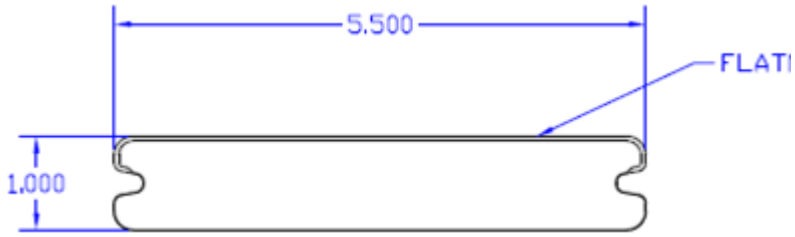


Figure 1: Transcend® Grooved-edge

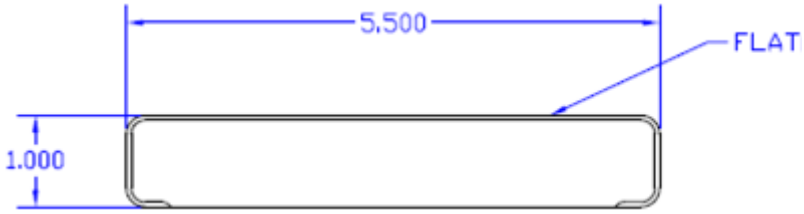


Figure 2: Transcend® Square

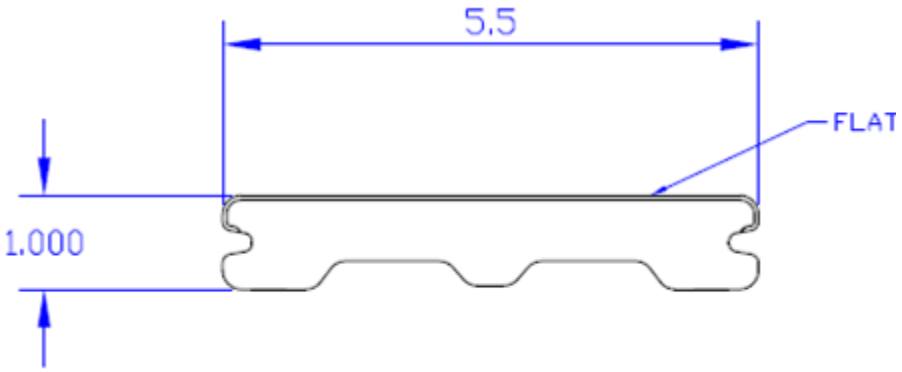


Figure 3: Contour® Groove

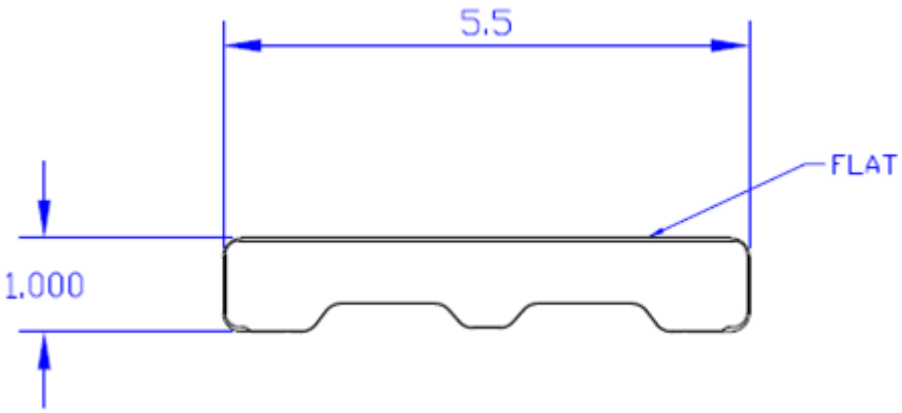
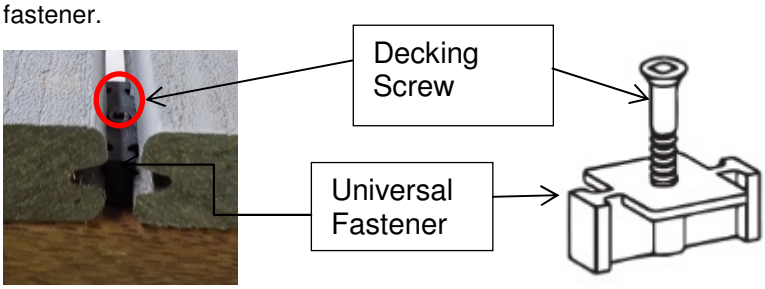
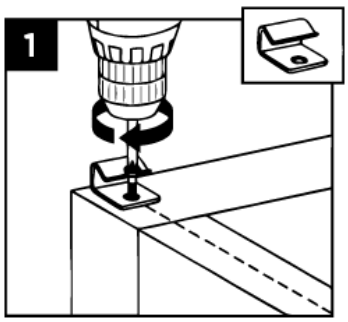
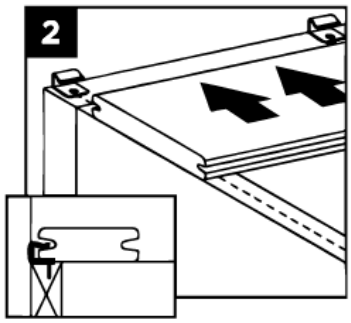


Figure 4: Contour® Square

3.2 SCHEDULE OF COMPONENTS:

Item		Description
Decking System		
1	**Name**	**Trex® , Transcend ® Grooved-edge or Transcend® Square or Contour® Groove or Contour® Square**
	Material	Wood thermoplastic composite lumber (WTCL), with an integrated shell that covers the boards on the top surface and sides. The underside of the deck board is not covered by integrated sheet. The integrated shell consists of proprietary surface formulation that produces a natural, wood-like grain pattern finish. The deck boards are made from approximately 50% wood fibre and 50% polyethylene by weight.
	Size	140mm wide × 25mm thick
	Density	1091 kg/m (nominal)
	Installation	Positioned on the top side of the joists parallel or perpendicular to the wall system, board is used as fascia.
	Fixing	The decking boards was secured with two (2) Decking screws (item 2) and Trex® Hideaway® Universal Fastener (item 3).
2	**Name**	**Decking screws**
	Size	Bugle head screws (nominated)
	Installation	One (1) screw was used to secure the decking board (item 1) closest to the wall at each joist, located 25mm from the edge of the board. Two (2) screws were used to secure the fascia decking board (item 1) to the bearer at nominally 450mm centres.
3	**Name**	**Trex® Hideway® Universal Fastener**
	Material	Fastener: Glass Filled Nylon
		Screw: Stainless Steel
	Size	Self-gapping connector clip:13.1mm high × 31.8mm wide × 19.0mm deep Screw: Ø4.5mm × 40mm long
	Installation	On top of the joist and between the Trex® Transcend ® groove decking board (item 1) with a decking screw (item 2) going through the centre of the universal fastener. 
4	**Name**	**Start Clip (Grooved profiles)**
	Size	14mm high × 22mm wide × 16mm deep
	Installation	One on each joist, screw fixed into the joist with decking screws (item 2). The groove edge of the decking board (item 1) was pushed into the start clips.

Item	Description
	  *images taken from the client installation specification

4 REFERENCED TEST PROCEDURES

This report is prepared with reference to the requirements of AS1530.8.1-2007 Section 21.

5 FORMAL ASSESSMENT SUMMARY

Based on the discussion presented in this report, it is the opinion of this registered testing authority that if the tested prototype described in Section 2 had been modified as described in Section 3, it would have been likely to achieve the bushfire attack level (BAL) as stated below if tested in accordance with the method referenced in Section 4 and subject to the requirements of Section 7.

Assessed Performance as per below table:

Product	Boards Direction	BAL	Proposed variation
Transcend® Square	Parallel or Perpendicular to wall	**29**	Enclosed and unenclosed
Transcend® Grooved-edge		**29**	Requirement to be enclosed and Metal Flashing on timber joists need to be installed
Contour® Groove		**19**	Enclosed and unenclosed, Metal Flashing on timber joists need to be installed
Contour® Square		**19**	Enclosed and unenclosed

6 DIRECT FIELD OF APPLICATION

The application of the results of this assessment is to decks constructed from exposed to the effects of bushfire from the outside as described in AS 1530.8.1-2007 Section 21.

7 REQUIREMENTS

This report details the methods of construction, test conditions and assessed results that would have been expected had the specific elements of construction described herein been tested in accordance with AS 1530.8.1–2007 Section 21.

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 VALIDITY

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

The conclusions of this assessment may be used to directly assess the fire resistance 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 resistance 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 only 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

9.3 AUTHORISATION ON BEHALF OF EXOVA WARRINGTONFIRE AUS PTY LTD

Prepared by:

O. Saad

Reviewed by:

C. McLean

9.4 DATE OF ISSUE

10/05/2017

9.5 EXPIRY DATE

31/05/2022

APPENDIX A - SUMMARY OF SUPPORTING DATA

A.1 TEST REPORT - EWFA 47551800.1

A.1.1 Report Sponsor

A.1.1.1 Trex Company Inc, 245 Capitol Lane, Winshester VA 22602 USA.

A.1.2 Test Laboratory

A.1.2.1 Exova Warringtonfire Aus Pty Ltd, Unit 2, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia.

A.1.3 Test Date

A.1.3.1 The test was conducted on 24/02/2017.

A.1.4 Test standard prescribed

A.1.4.1 The test was conducted in accordance with AS 1530.8.1-2007.

A.1.5 Variations to Test Standard

A.1.5.1 None

A.1.6 Description of Tested Assembly

A.1.6.1 The test assembly comprised a nominal 1800mm wide × 750mm deep × 450mm high deck that was set within a 1800mm wide × 250mm deep recess formed within a nominal 3000mm × 3000mm wall system which met the minimum requirements as specified by AS3959 for the specified exposure level.

A.1.6.2 The deck consisted of Trex® Transcend® decking boards that were 140mm wide × 25mm thick, that were installed parallel to the wall system with 6mm spacing between each board. The boards were secured to joists with Trex® Hideway® Universal fastener and 9G × 40mm long Decking screws. The front fascia of the specimen consisted of a decking board horizontally installed in the vertical plane.

A.1.6.3 The wall system met the minimum deemed to satisfy requirements of AS3959 for the prescribed exposure level and consisted of a timber framed wall system of 90 × 45mm studs clad with 13mm fire rated plasterboard and 6mm thick square edge fibre-cement board to the exposed side and 10mm standard plasterboard to the unexposed side.

Figure A1 – Exposed face of specimen before commencement of the test.

A.1.7 Instrumentation

A.1.7.1 The test instrumentation was in accordance with AS 1530.8.1-2007.

A.1.8 Test Results

A.1.8.1 The test was terminated at 60 minutes in accordance with the procedures of AS1530.8.1-2007.

A.1.8.2 The specimen indicated the following potential performance:

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	-
Extent of flaming exceeding 500mm limits on decking boards		No Failure	-
Flaming on the fire-exposed side at the end of the 60 minute test period.		Failure at 60 minutes.	Flaming around the top crib location
Radiant heat flux 365mm from the non-fire side exceeding 15 kW m^{-2}		No Failure	-
Mean and maximum temperature rises greater than 140K and 180K		Not applicable	-
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 250ºC and 300ºC respectively between 20 min and 60 min after commencement of test		Failure	-
Crib class	**A**	**Peak heat flux**	**29 kW m^{-2}**
Test Result		**Nil**	

Figure A2 – Exposed face of specimen at the conclusion of the test

A.2 TEST REPORT – EWFA 2824600.1

A.2.1 Report Sponsor

A.2.1.1 Trex Company Inc, 245 Capitol Lane, Winshester VA 22602 USA.

A.2.2 Test Laboratory

A.2.2.1 Exova Warringtonfire Aus Pty Ltd, Unit 2, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia.

A.2.3 Test Date

A.2.3.1 The test was conducted on 15/03/2013.

A.2.4 Test standards prescribed

A.2.4.1 The test was conducted in accordance with AS 1530.8.1-2007.

A.2.5 Variations to Test Standard

A.2.5.1 None

A.2.6 General description of tested specimens

A.2.6.1 The test assembly comprised a nominal 1790mm wide × 725mm deep × 450mm high deck that was set within a 1800mm wide × 250mm deep recess formed within a nominal 3000mm × 3000mm wall system.

A.2.6.2 The deck consisted of Trex® Transcend® Square edge decking boards that were 140mm wide × 25mm thick, that were installed perpendicular to the wall system with 3mm spacing between each board. The boards were secured to joists with 10G × 65mm long CAP-TOR Decking screws. The front fascia of the specimen consisted of a decking board horizontally installed. Stainless steel mesh was installed below the deck in order to simulate an enclosed sub-floor.

A.2.6.3 The wall system incorporated a timber framed wall system of 90 × 45mm studs clad with 13mm Gyprock Fyrchek plasterboard and 6mm thick square edge CSR Cemintel fibre-cement board to the exposed side and 10mm standard plasterboard to the unexposed side.

A.2.1 Instrumentation

A.2.1.1 The test instrumentation was in accordance with AS 1530.8.1-2007.

A.2.2 Test Results

A.2.2.1 The test was terminated at 60 minutes in accordance with the procedures of AS1530.8.1-2007.

A.2.2.2 The specimen indicated the following potential performance:

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	-
Extent of flaming exceeding 500mm limits on decking boards		No Failure	-
Flaming on the fire-exposed side at the end of the 60 minute test period.		No Failure	-
Radiant heat flux 365mm from the non-fire side exceeding 15 kW m^{-2}		Not applicable	-
Mean and maximum temperature rises greater than 140K and 180K		Not applicable	-
Radiant heat flux 250 mm from the specimen, greater than 3 kW m^{-2} between 20 min and 60 min		Not applicable	-
Mean and maximum temperature of internal faces exceeding 250ºC and 300 ºC respectively between 20 min and 60 min after commencement of test		No Failure	-
Crib class	**A**	**Peak heat flux**	**29 kW m^{-2}**
Test Result		**BAL A-29**	

A.3 TEST REPORT – EWFA 2824602.1

A.3.1 Report Sponsor

A.3.1.1 Trex Company Inc, 245 Capitol Lane, Winshester VA 22602 USA.

A.3.2 Test Laboratory

A.3.2.1 Exova Warringtonfire Aus Pty Ltd, Unit 2, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia.

A.3.3 Test Date

A.3.3.1 The test was conducted on 22/03/2013.

A.3.4 Test standards prescribed

A.3.4.1 The test was conducted in accordance with AS 1530.8.1-2007.

A.3.5 Variations to Test Standard

A.3.5.1 None

A.3.6 General description of tested specimens

A.3.6.1 The test assembly comprised a nominal 1800mm wide × 750mm deep × 450mm high deck that was set within a 1800mm wide × 250mm deep recess formed within a nominal 3000mm × 3000mm wall system.

A.3.6.2 The deck consisted of Trex® Transcend™ Groove decking boards that were 140mm wide × 25mm thick, that were installed perpendicular to the wall system with 6.3mm spacing between each board. The boards were secured to joists with three Trex Hideaway® Universal fastener and 10G × 65mm CAP-TOR Decking screws at the edge of the deck. The front fascia of the specimen consisted of a decking board horizontally installed. Stainless steel mesh was installed below the deck to in order to simulate an enclosed sub-floor.

A.3.6.3 The wall system incorporated a timber framed wall system of 90 × 45mm studs clad with 13mm Gyprock Fyrchek plasterboard and 6mm thick square edge CSR Cemintel fibre-cement board to the exposed side and 10mm standard plasterboard to the unexposed side.

A.3.1 Instrumentation

A.3.1.1 The test instrumentation was in accordance with AS 1530.8.1-2007.

A.3.2 Test Results

A.3.2.1 The test was terminated at 60 minutes in accordance with the procedures of AS1530.8.1-2007.

A.3.2.2 The specimen indicated the following potential performance:

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	-
Extent of flaming exceeding 500mm limits on decking boards	No Failure	-
Flaming on the fire-exposed side at the end of the 60 minute test period.	No Failure	-
Radiant heat flux 365mm from the non-fire side exceeding 15 kW m^{-2}	Not applicable	-
Mean and maximum temperature rises greater than 140K and 180K	Not applicable	-
Radiant heat flux 250 mm from the specimen, greater than 3 kW m^{-2} between 20 min and 60 min	Not applicable	-
Mean and maximum temperature of internal faces exceeding 250ºC and 300 ºC respectively between 20 min and 60 min after commencement of test	No Failure	-

Crib class	A	Peak heat flux	19 kW m^{-2}
Test Result		BAL A19	

APPENDIX B - ASSESSMENT OF SPECIFIC VARIATIONS

B.1 PROPOSED VARIATIONS TO DECK BOARD PROFILES

B.1.1 Proposal

B.1.1.1 It is proposed to vary deck board profiles as per below table with alternative installation and protection components.

Product	Boards Direction	Proposed variation
Transcend® Square	Parallel or Perpendicular to wall	Enclosed and unenclosed
Transcend® Grooved-edge		Requirement to be enclosed and Metal Flashing on timber joists
Contour® Groove		Enclosed and unenclosed, Metal Flashing on timber joists
Contour® Square		Enclosed and unenclosed

B.1.1.2 Proposed deck construction shall be as tested in summarised specimen in Appendix A with no further variations or changing of fixings or installation components.

B.1.1 Discussion

B.1.1.1 The deck construction tested in summarised tests in Appendix A are generally comprised "Wood Thermoplastic Composite Lumber (WTCL)" boards fixed to the external surfaces of a timber deck framing adjacent to a timber-framed wall clad with 13mm Gyprock Fyrchek plasterboard and 6mm fibre cement.

B.1.1.2 The manufacturer of the Wood thermoplastic composite lumber (WTCL) (Trex Company Inc) has confirmed in writing that WTCL material has same material composition for all assessed decking boards. Based on this fact the variation can be considered as a name change rather than a change to the composition, proposed construction is positively assessed.

Transcend® Grooved-edge

B.1.1.3 When tested at a BAL level of 29, the specimens met all performance criteria except the specimen tested in EWFA 47551800.1 failed performance criterion "Flaming on the fire-exposed side at the end of the 60 minute test period". For this criterion, all measured surfaces were below this limit except for one position adjacent to top crib area which remained flaming at the end of the test period under the back left side of the deck.

B.1.1.4 With reference to test EWFA 2824600.1 and EWFA 47551800.1, it is important to note the peak temperature behind the cladding occurred after the radiation profile had been completed its cycle (0-10 minutes) and that the location of peak temperature measured was directly above the crib on left of the deck.

B.1.1.5 The above result indicates the peak cladding temperature measured was strongly linked the exposure from the burning cribs rather than from the incident radiation from the test apparatus.

B.1.1.6 The above result also indicates that at the particular location just above the crib where temperature readings were highest, the wall cladding was able to adequately protect the wall framing from the effects of the crib ignition.

B.1.1.7 The significance of above observations is that decking boards did not determinately affect fire resistance performance of decking and wall system.

B.1.1.8 With reference to EWFA 47551800.1, flaming on the fire-exposed side at the end of the 60 minutes test period occurred on decking board around the top crib area. Upon closer inspection of test's photographs, it was observed that timber joist below decking sustained flaming .

B.1.1.9 It was also observed that spread of flaming was less than the 500mm limit as per AS1530.8.1 performance criteria which give further confidence in the performance of decking material tested in EWFA 47551800.1 and EWFA 2824600.1.

B.1.1.10 Upon closer inspection to the profile shape of tested *Transcend® Grooved-edge* board , it is observed that the lip groove between deck boards assisted in recirculation of hot gases between deck boards and below joists causing a slightly higher heat build-up . Combining this observation with the presence of a burning crib the result was as observed above where joists sustained flaming at the end of the test.

B.1.1.11 The proposed construction for *Transcend® Grooved-edge* as tested in EWFA 47551800.1 requires a metal mesh to be installed below deck to simulate an enclosed sub-floor and metal flashing on timber joists which is considered to limit hot gas circulation between deck boards and joists, reducing the likelihood of joist flaming.

B.1.1.12 The additional requirement of metal mesh installation was tested in EWFA 2824600.1 where specimen achieved BAL-29 rating with no observations of flaming at the end of the test.

B.1.1.13 The proposed metal flashing on joists below decking boards is considered to provide adequate protection and block heat transfer interaction between the joist and decking.

B.1.1.14 Based on the above discussion, observations and in absence of introduced detrimental effects it is considered that if the proposed construction was tested with metal mesh protection and metal flashing on joists, specimen will likely not sustain flaming at 60 minutes test period specimen would therefore meet the performance requirements of AS1530.8.1-2007 at a BAL A-29 level.

Transcend® Square

B.1.1.15 With reference to EWFA 2824600.1, it is observed that test specimens were differently oriented with respect to the wall. However

B.1.1.16 It was observed that spread of flaming was less than the 500mm limit as per AS1530.8.1 performance criteria which give further confidence in the performance of decking material tested in EWFA 47551800.1 and EWFA 2824600.1.

B.1.1.17 Decking boards' direction was perpendicular in EWFA 2824600.1 and parallel in EWFA 47551800.1 with respect to the wall.

B.1.1.18 The significance of above observation is the decking boards performed similarly with respect spread of flaming regardless of board direction although specimen tested in EWFA 47551800.1 was not protected with metal mesh which considered more onerous test condition.

B.1.1.19 The proposed *Transcend® Square* decking construction is to be installed parallel to the wall and with the option of unenclosed installation.

B.1.1.20 Based on test observations of WTCL material in EWFA 47551800.1 and EWFA 2824600.1 against spread of flaming, it is considered the boards' direction is not detrimental to the fire resistance performance of the decking system.

B.1.1.21 With regards to optional installation of metal mesh below decking, it is considered due to straight side face of the deck profile, hot gases will likely not circulate compared to a grooved profile, resulting less heat build-up between deck boards.

B.1.1.22 Based on the above discussion, observations and in absence of introduced detrimental effects it is considered that if the proposed construction was tested parallel to wall in unenclosed installation, specimen would meet the performance requirements of AS1530.8.1-2007 at a BAL A-29 level.

Contour® Groove

B.1.1.23 The *Contour® Groove* was not previously tested; the proposed construction is to be as tested in EWFA 47551800.1 with the option of installing metal mesh to simulate a sub-floor installation and metal flashing on joists.

B.1.1.24 Deck profile is found to be similar tested *Transcend® Grooved-edge* board in EWFA 47551800.1, except for two recessed slots approximately 1mm wide x 0.4mm high on the bottom face of board profile, separated with a ridge in between.

B.1.1.25 The *Contour® Groove* is expected to perform differently to tested specimen; it is considered the contour board profile will likely introduce circulation of hot gases at the bottom face of decking boards which may result heat build-up and cause flaming of joists or decking boards.

B.1.1.26 The above analysis puts in consideration that proposed decking board was subjected to testing conditions of BAL A-29.

B.1.1.27 However, in order to be able to positively assess the proposed boards, a BAL 19 conditions can be considered.

B.1.1.28 With reference to tested EWFA 2824602.1 specimen temperature where the crib was positioned on the deck reached maximum of 155^{o}C degrees, while specimen temperature at the same location for specimen tested in EWFA 47551800.1 was 180^{o}C degrees.

B.1.1.29 The importance of above observation is while the maximum specimen temperature in BAL 19 was less than BAL 29 as expected the boards in both tests exhibited different discoloration and spread of flame.

B.1.1.30 Based on the above discussion, observations and in absence of introduced detrimental effects it is considered that if the proposed construction was tested parallel or perpendicular to wall with metal mesh protection and metal flashing on joists, specimen would meet the performance requirements of AS1530.8.1-2007 at a BAL A-19 level.

Contour® Square

B.1.1.31 The *Contour® Square* was not previously tested; the proposed construction is to be as tested in EWFA 2824602.1 with the option of installing metal mesh to simulate a sub-floor installation.

B.1.1.32 With reference to above discussion B.1.1.24 to B.1.1.29, it is considered that *Contour® Square* is expected to meet the performance required at BAL A-19 level.

B.1.1.33 Upon closer inspection of deck profile shape and comparing it against specimen tested in EWFA 2824600.1 it was found that both profiles have the same side edge face where there is no groove between decking boards.

B.1.1.34 It is considered the absence of groove on the edge of deck board will likely prevent hot gases circulating between boards and lessen the chances of heat build-up which may cause failure due to joist flaming on the fire-exposed side at the end of the 60 minute test period.

B.1.1.35 Based on the above discussion, observations and in absence of introduced detrimental effects it is considered that if the proposed construction was tested parallel or perpendicular to wall, enclosed and unenclosed installation, specimen would meet the performance requirements of AS1530.8.1-2007 at a BAL A-19 level.