ASSESSMENT REPORT

Assessment of the FRL performance of 51mm, 64mm and 78mm Speedpanel designs, in accordance with AS1530.4-2005, if leaving the 60µm thick Speedpanel Plastic Film on panels when installed

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Testing. Advising. Assuring.

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1 INTRODUCTION

This proposal presents an assessment of the fire resistance performance of walls made from 51mm, 64mm and 78mm thick Speedpanel when installed with the Speedpanel plastic film left on, if tested in accordance with AS1530.4-2014.

The proposed system(s) 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 7, 8, and 9 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.

2 TESTED PROTOTYPES

This assessment makes reference to nine tests of Speedpanel wall systems, tested in accordance with AS1530.4-2005, AS1530.1-1994, ISO1182:2002, AS1530.4-1997 and AS1530.4-2014, and listed in Table 1.

Table 1 – Tested Prototypes

Test Report	Tested Specimen	Coating	FRL
BWA 2286900.5	78mm thick, 2.79m x 3m loaded Speedpanel panel system	None	-/120/60
EWFA 2848300.2	64mm thick, 3m x 3m Speedpanel wall system	None	-/120/-
EWFA 2736002.1	51mm thick, 3.01m x 2.97m Speedpanel wall system	None	Not assigned
EWFA 2798800.1AS	51mm thick, 1.2m x 1.2m Speedpanel wall system penetrated by 4 services	None	-/120/30 -/120/- -/120/60 -/120/120
FR 3754	76mm thick, 3m x 3m Speedpanel wall system	None	-/240/120
EWFA 39386200.1	5 vertical right angle corner joints with 78mm thick Speedpanel wall panels, nominal 1.2m x 1.2m size	Plastic film	Not assigned
FNC 9204, FNC 9205	5 cylindrical specimens of nominal diameter 45mm and height 50mm	Paint, primer	Designated non-combustible
BWA 2257600.4	78mm thick, 3m x 3m non-loadbearing Speedpanel wall	Primer, sealant	Not assigned
EWFA 36370200.2	78mm thick, 1.6m x 1.6m Speedpanel (west wall) and plasterboard (east wall) system penetrated by 12 and 11 services respectively	Plastic film	Various, some not assigned

BWA 2286900.5 describes a test of a vertically oriented 78mm thick Speedpanel wall system 2.79m x 3m in size. The panels incorporate a tongue-and-groove detail on their vertical edges. The wall was loaded from the base of the wall at six points at 500mm centres with an average load of 2.0kN at each point (4.3 kN/m) to simulate a wall of increased height. The test was conducted by Bodycote Warringtonfire Aus Pty Ltd and sponsored by Speedpanel Vic Pty Ltd.

EWFA 2848300.2 describes a test of a vertically oriented 64mm thick Speedpanel wall system 3m x 3m in size. The panels incorporate a tongue-and-groove detail on their vertical edges. The wall system was constructed into a steel restraint frame, the top lintel of which was pre-conditioned from a previous test and may have been weaker as a result. The test was conducted by Exova Warringtonfire Aus Pty Ltd and sponsored by Speedpanel Vic Pty Ltd.

EWFA 2736002.1 describes a test of vertically oriented 51mm thick Speedpanel wall system 3.01m x 2.97m in size. The panels incorporate a tongue-and-groove detail on their vertical edges. The wall was loaded with a total load of 2.876kN applied via 3 off-point loads, nominally 1450mm apart at the bottom edge of the wall. The applied load at each hydraulic jack was 0.959kN. The load was applied for the duration of the formal part of the test. The test was conducted by Exova Warringtonfire and sponsored by Speedpanel Vic Pty Ltd.

EWFA 2798800.1AS describes a test of a vertically orientated 51mm thick Speedpanel wall system 1.2m x 1.2m which was penetrated by four PVC pipes. The specimen included a 100mm wide x 750mm long x 13mm thick fire rated plasterboard strip fixed to the upper west side of the specimen and a 100mm wide x 750mm long x 20mm thick strip of Promatect 100 calcium silicate board fixed to the east side of the specimen. The test was conducted by Exova Warrington fire and sponsored by Speedpanel Vic Pty Ltd.

FR 3754 describes a test of a vertically orientated 76mm thick Speedpanel wall system nominally 3m wide x 3m high in size. The panels incorporate a tongue-and-groove detail on their vertical edges. The test was conducted by BRANZ (New Zealand) and sponsored by Speedwall New Zealand.

EWFA 39386200.1 describes a test of 5 vertical corner joints in 78mm thick Speedpanel wall system nominally 1.2m x 1.2m in size. In this test the Speedpanel plastic film (60µm thick) remained attached to the panels and the sealant was applied over the plastic at the locations specified in the test report. The test was conducted by Exova Warringtonfire and sponsored by Speedpanel Vic Pty Ltd.

FNC 9204 describes a test of 5 cylindrical samples of Speedpanel (44mm diameter and 50mm long) with a standard core density of 435kg/m^3 and 0.4mm BMT steel panel skin. The samples were tested in accordance with ISO 1182:2002 ‘Reaction to fire tests for building products – non-combustibility test’. In this test 5 samples of Speedpanel were provided to the lab with 11 layers nominated in the makeup of the product. Included in these samples was 25µm of paint and primer on the outer faces of the Speedpanel (Coloured Speedpanel). The test was conducted by CSIRO, 14 Julius Avenue, Riverside Corporate Park, North Ryde NSW 2113. Certificate FNC 9205 was issued in accordance with AS1530.1-1994, following test FNC 9204.

BWA 2257600.4 describes a test of a vertically oriented 78mm thick Speedpanel wall system 3m x 3m in size. The panels incorporate a tongue-and-groove detail on their vertical edges. The wall was not loaded. The assembly was asymmetric due to various support methods and perimeter details. The wall was installed with both vertical edges fixed to the specimen frame and the top and bottom free edges free from lateral restraint. The test was conducted by Bodycote Warringtonfire Aus Pty Ltd and sponsored by Speedpanel Vic Pty Ltd.

EWFA 36370200.2 describes a test of vertically oriented 78mm thick Speedpanel (west wall) and plasterboard (east wall) system penetrated by 12 and 11 services respectively. The Speedpanel component of the specimen included the Speedpanel protective plastic film (used to protect the panel from scratching during transport). The test was sponsored by Honeywell Automation & Control Solutions and conducted by Exova Warringtonfire Aus Pty Ltd. Written permission from Honeywell has been obtained to use the report EWFA 36370200 in this assessment.

Refer to Appendix A for a detailed summary of the reference test data.

3 VARIATION TO TESTED PROTOTYPES

The proposed construction shall be Speedpanel 78mm, 64mm and 51mm thick vertically and horizontal orientated walls as tested in BWA 2257600, EWFA 2848300.2 and EWFA 2736002.1 and all Speedpanel tested and assessed configurations inclusive of shaft systems, scissors stairs, wall, ceiling, penetration services, aperture services and doorsets with consideration given to the option of leaving the Speedpanel 60µm thick protective plastic film on the product during install and in situ thereafter without negatively impacting the fire performance of the Speedpanel system.

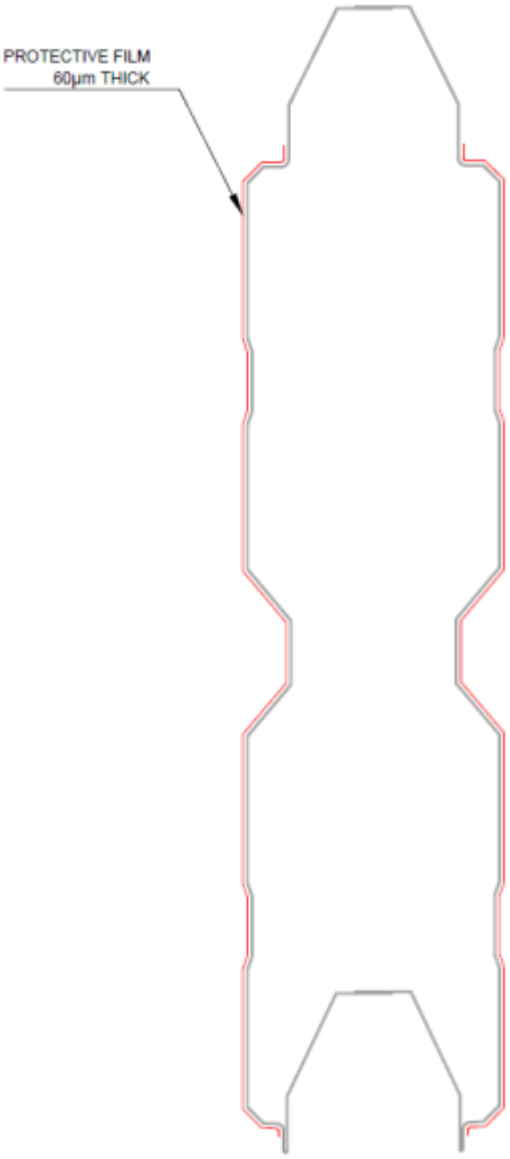

Figure 1 – Location of Speedpanel 60µm thick protective plastic film on 51mm, 64mm and 78mm Speedpanel panels

4 REFERENCED TEST PROCEDURES

This report is prepared with reference to the requirements of AS1530.4-2005.

5 FORMAL ASSESSMENT SUMMARY

Based on the discussion presented in this report, it is the opinion of this registered testing authority that leaving the Speedpanel 60µm thick protective plastic film on the panels during install and in situ thereafter will not negatively impact the established fire performance of the Speedpanel systems.

6 DIRECT FIELD OF APPLICATION

The application of the results of this assessment is to all Speedpanel systems exposed to the effects of fire from one side or either direction based on design.

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 1530.4-2005.

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 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 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

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 Exova Warringtonfire Aus Pty Ltd.

9.3 AUTHORISATION ON BEHALF OF EXOVA WARRINGTONFIRE AUS PTY LTD

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S Kettle

9.4 DATE OF ISSUE

19/01/2017

9.5 EXPIRY DATE

31/01/2022

APPENDIX A - SUMMARY OF SUPPORTING DATA

A.1 TEST REPORT – BWA 2286900.5

A.1.1 Test Sponsor

A.1.1.1 Speedpanel Vic, Pty. Ltd., 89-91 Canterbury Road, Kilsyth, Vic 3137.

A.1.2 Test Laboratory

A.1.2.1 Bodycote 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 18th August 2008.

A.1.4 Test standard prescribed

A.1.4.1 The test was conducted in accordance with AS 1530.4-2005 Sections 2 & 3.

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 specimen comprised a nominal 2790mm wide x 3000mm high x 78mm thick loadbearing wall made of vertically oriented 78mm thick Speedpanel panels that incorporated a tongue-and-groove detail on their vertical edges. Each panel comprised a 0.42mm thick galvanized mild steel facing on all sides and an aerated concrete core.

A.1.6.2 The perimeter framing comprised 83mm wide x 58mm high x 1.2mm thick steel C-tracks on the top and bottom of the wall system. The end cap on the west side was 50mm wide x 59mm high x 0.6mm thick C-track and the end cap on the east side was 17mm wide x 60mm high x 0.6mm thick C-track.

A.1.6.3 The panels were fixed to the top and bottom C-tracks at nominal 250mm centres and fixed to each other along the horizontal centreline on both exposed and unexposed sides with 15mm long self-tapping screws.

A.1.6.4 Fire rated acrylic sealant was used to seal any gaps in the construction prior to testing.

A.1.6.5 The wall was loaded from the base of the wall at six points at 500mm centres. The average load that was applied at each point for the duration of the test was approximately 2.0kN per load point (4.3kN/m).

A.1.7 Instrumentation

A.1.7.1 The test instrumentation was in accordance with AS 1530.4-2005.

A.1.8 Conditioning

A.1.8.1 The test load was applied to the wall for 15 minutes prior to the commencement of the fire resistance test.

A.1.9 Results

A.1.9.1 The test was terminated at 144 minutes.

A.1.9.2 The ambient temperature at the start of the test was 29°C and varied between 29°C and 30°C during the test.

A.1.9.3 The specimen achieved the result given in Table A.1.

Table A.1: Specimen Performance in Test BWA 2286900.5

Criteria	Result
Structural adequacy	144 minutes
Integrity	120 minutes
Insulation (Wall System)	64 minutes
Insulation (Panel only)	80 minutes
FRL	**-/120/60**

A.2 TEST REPORT – EWFA 2848300.2

A.2.1 Test Sponsor

A.2.1.1 Speedpanel Vic, Pty. Ltd., 89-91 Canterbury Road, Kilsyth, Vic 3137.

A.2.2 Test Laboratory

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

A.2.3 Test Date

A.2.3.1 The test was conducted on 29th May 2013

A.2.4 Test standard prescribed

A.2.4.1 The test was stated to be conducted in accordance with AS 1530.4-2005

A.2.5 Variations to Test Standard

A.2.5.1 None.

A.2.6 Description of Tested Assembly

A.2.6.1 The test assembly comprised a nominal 3000mm wide × 3000mm high × 64mm thick Speedpanel wall system.

A.2.6.2 The tested configuration incorporated 64mm thick Speedpanel panels vertically orientated to form a vertical wall system with 0.75mm BMT perimeter track. The panels incorporate a tongue-and-groove detail on their vertical edges. Each panel comprised a 0.42mm thick galvanized mild steel facing on all sides and an aerated concrete core.

A.2.6.3 The side and bottom tracks comprised 67mm wide × 51mm deep × 0.8mm galvanised steel C-track. Flat top self-drilling, zinc coated steel screws, 10g × 16mm fixed the side tracks to the panels at 500mm centres on exposed and unexposed side. Flat top self-drilling, zinc coated steel screws, 10g × 30mm, fixed the head and bottom tracks to the panels at every second panel join on both exposed and unexposed sides. Head fixings were staggered.

A.2.6.4 Flat top self-drilling, zinc coated steel screws, 10g × 16mm used to fix panels to each other at every second panel join at 1500mm height from bottom on both exposed and unexposed sides. These fixings were staggered such that one join had one screw fixing at 1500mm height.

A.2.6.5 Hilti CP 606 Fire resistant joint filler (now marked as Hilti CP 606 Flexible firestop sealant) applied to the joints between the panel and the C-track at head, base and vertical edges on both exposed and unexposed sides and also applied to joints between tracks and surround blockwork along head, base and fixed edges.

A.2.7 Instrumentation

A.2.7.1 The test instrumentation was stated to be in accordance with AS 1530.4-2005.

A.2.8 Results

A.2.8.1 The test was terminated at 181 minutes.

A.2.8.2 The ambient temperature at the start of the test was 18°C and did not vary significantly throughout the duration of the test.

A.2.8.3 The specimen achieved the result given in Table A.2.

Table A.2: Specimen Performance in Test EWFA 2848300.2

Component	Criteria	Result
Head and Side Tracks	Structural Adequacy	Not Applicable
	Integrity	133 minutes
	Insulation	14 minutes
Wall Panels	Structural Adequacy	Not Applicable
	Integrity	No Failure
	Insulation	93 Minutes
Overall System	Structural Adequacy	Not Applicable
	Integrity	133 minutes
	Insulation	14 minutes
FRL		**-/120/-**

A.3 TEST REPORT – EWFA 2736002.1

A.3.1 Test Sponsor

A.3.1.1 Speedpanel Vic, Pty. Ltd., 89-91 Canterbury Road, Kilsyth, Vic 3137.

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 13th July 2012.

A.3.4 Test standard prescribed

A.3.4.1 The test was conducted in accordance with AS 1530.4-2005.

A.3.5 Variations to Test Standard

A.3.5.1 Average furnace temperature was outside the limits prescribed in AS1530.4-2005 Clause 2.10.2.2(a) between 21 minutes and 22 minutes 25 seconds.

A.3.6 Description of Tested Assembly

A.3.6.1 The test specimen comprised a nominal 3010mm wide x 2970mm high x 51mm thick loadbearing wall made of vertically orientated 255mm wide ×51mm thick Speedpanel panels that incorporated a tongue-and-groove detail on their vertical edges. Each panel comprised a 0.2mm BMT (0.27mm final measured thickness) galvanized steel skin on all sides and an aerated concrete core. The steel skin was joined on male and female sides with pop-rivets at nominal 50mm centres.

A.3.6.2 The test assembly was asymmetric with the west edge fixed and the east edge free from lateral restraint from the formal segment of the test. The fixed edge was then released for the second stage of the test.

A.3.6.3 The west side head track was 885mm long × 53mm deep × 50mm high × 1.01mm thick (measured) galvanised steel C-track with intumescent strip in channels in web. Intumescent strips were held in place using Firetherm Intumastic acrylic sealant mastic.

A.3.6.4 The east side head track was 2135mm long × 55mm deep × 50mm high × 0.75mm (measured) galvanised steel C-track with intumescent strips installed in a similar manner to the west side head track.

A.3.6.5 The head track was fixed to the lintel with 6.5mm × 50mm galvanised steel spikes, mushroom head at 400mm centres.

A.3.6.6 The perimeter framing comprised side tracks of 56mm deep × 55mm wide × 0.6mm thick (measured) galvanised steel C-track and bottom track was made of 55mm deep × 52mm wide × 1.21mm thick (measured) galvanised steel C-track. The panels were fixed to the top and bottom C-tracks at nominal 500mm centres and fixed to each other along the horizontal centreline on both exposed and unexposed side with 16mm long self-tapping screws.

A.3.6.7 Hilti CP 606 Fire Resistance Acoustic Mastic (now marked as Hilti CP 606 Flexible firestop sealant) was used to seal any gaps in the construction prior to testing.

A.3.6.8 A load of 2.876kN was applied at three points 1450mm apart at the base of the wall. The applied load at each hydraulic jack was 0.959kN and was applied for the duration of the formal part of the test. The load was later increased and post-test observations were collected.

A.3.7 Instrumentation

A.3.7.1 The test instrumentation was in accordance with AS 1530.4-2005.

A.3.8 Results

A.3.8.1 The ambient temperature at the start of the test was 15°C and varied between 15°C and 18°C during the test.

A.3.8.2 The test was terminated at 94 minutes.

A.3.8.3 Formal part of the test was terminated at 66 minutes and specimen prepared for load increased section of test and furnace operation continued. Fixed edge screws were removed.

A.3.8.4 A load of 2.876kN was applied via 3-off points at the bottom of the wall. The load was applied for the duration of the formal part of the test. The load was later gradually increased up to 15.15kN.

A.3.8.5 The deflection measured at the centre of wall at 60 minutes was 162mm. The centre deflection increased to 235mm when the applied load increased to 15.15kN.

A.3.8.6 The concrete lintel spalled heavily during the test affecting the validity of some of the thermocouple readings along the head of the specimen. Thermocouples 031 to 033, 034 to 035, and 047-049 were not affected.

A.3.8.7 The specimen achieved the result given in Table A.3.

Table A.3: Specimen Performance in Test EWFA 2736002.1

Component	Criteria	Result
Panels	Structural adequacy	No failure at 66 minutes
	Integrity	No failure at 66 minutes
	Insulation	Failure at 61 minutes
	FRL	**Not assigned**
Head Track	Structural adequacy	No failure at 66 minutes
	Integrity	No failure at 66 minutes
	Insulation	Failure at 27 minutes
	FRL	**Not assigned**

A.4 TEST REPORT – EWFA 2798800.1AS

A.4.1 Test Sponsor

A.4.1.1 Speedpanel Vic, Pty. Ltd., 89-91 Canterbury Road, Kilsyth, Vic 3137.

A.4.2 Test Laboratory

A.4.2.1 Exova Warringtonfire Aus Pty Ltd, Unit 2, 409-411 Hammond Road, Dandenong, VIC 3175.

A.4.3 Test Date

A.4.3.1 The test was conducted on 29th January 2013.

A.4.4 Test standard prescribed

A.4.4.1 The test was stated to be conducted in accordance with AS 1530.4-2005

A.4.5 Variations to Test Standard

A.4.5.1 No significant departures from the test methods.

A.4.6 Description of Tested Assembly

A.4.6.1 The test assembly comprised a nominal 1200mm wide × 1200mm high × 51mm thick Speedpanel wall system penetrated by various services. Each panel incorporated a tongue-and-groove detail on their vertical edges. Each panel comprised a 0.2mm BMT (0.3mm final measured thickness) galvanized steel skin on all sides and an aerated concrete core.

A.4.6.2 A 600mm long × 55mm wide × 52mm deep × 1.2mm galvanised steel head track was installed on the west side and fixed to the lintel with 6.5g × 38mm Mushroom Head Nails. A 600mm long × 60mm wide × 52mm deep × 1.2 BMT galvanised steel head track with intumescent strips in the recessed part of the flange, on either side was installed on the east side and fixed to the lintel with 6.5g × 38mm Mushroom Head Nails.

A.4.6.3 The side and bottom tracks were made of 55mm wide × 52mm deep × 1.2mm galvanised steel track.

A.4.6.4 One layer of 13mm thick × 100mm wide × 750mm high Fyrchek plasterboard was installed along the west edge of the specimen wall and fixed to the Speedpanel through west vertical track with 6g × 40mm Bugle Head, Fine Thread, Self-drilling screws.

A.4.6.5 One layer of 20mm thick × 100mm wide × 750mm high PROMATECT® 100 was installed along the east edge of the specimen wall and fixed to Speedpanel through east vertical track with 6g × 40mm Bugle Head, Fine Thread, Self-drilling screws.

A.4.6.6 Fire rated acrylic sealant was used to seal any gaps in the construction prior to testing.

A.4.6.7 Details of the service penetrations are not relevant to this assessment report.

A.4.7 Instrumentation

A.4.7.1 The test instrumentation was stated to be in accordance with AS 1530.4-2005.

A.4.8 Results

A.4.8.1 The test was terminated at 132 minutes.

A.4.8.2 The ambient temperature at the start of the test was 23°C and did not vary significantly throughout the duration of the test.

A.4.8.3 The maximum temperature recorded on the unexposed side of west head C-track at 120 minutes was 351°C.

A.4.8.4 The maximum temperature recorded on the unexposed side of 13mm thick Fyrchek plasterboard at 120 minutes was 192°C.

A.4.8.5 The maximum temperature recorded on the unexposed side of 20mm thick PROMATECT® 100 at 120 minutes was 104°C.

A.4.8.6 The maximum temperature recorded on the unexposed side of wall panel at 120 minutes was 367°C.

A.4.8.7 The specimen achieved the result given in Table A.4.

Table A.4: Specimen Performance in Test EWFA 2798800.1AS

Service	Criteria	Performance
A	Structural Adequacy	Not applicable
	Integrity	No failure at 132 minutes
	Insulation	Failure at 45 minutes
	FRL	**-/120/30**
B	Structural Adequacy	Not applicable
	Integrity	No failure at 132 minutes
	Insulation	Failure at 28 minutes
	FRL	**-/120/-**
C	Structural Adequacy	Not applicable
	Integrity	No failure at 132 minutes
	Insulation	Failure at 66 minutes
	FRL	**-/120/60**
D	Structural Adequacy	Not applicable
	Integrity	No failure at 132 minutes
	Insulation	Failure at 27 minutes
	FRL	**-/120/-**

A.5 TEST REPORT – FR 3754

A.5.1 Test Sponsor

A.5.1.1 Speedwall New Zealand Ltd, 78 Maui Street, Te Rapa, Hamilton, New Zealand.

A.5.2 Test Laboratory

A.5.2.1 BRANZ Limited, Moonshire Road, Judgeford, Private Bag 50908, Porirua City, New Zealand.

A.5.3 Test Date

A.5.3.1 The test was conducted on 17th May 2006.

A.5.4 Test standard prescribed

A.5.4.1 The test was conducted in accordance with AS 1530.4-1997 Section 3.

A.5.5 Variations to Test Standard

A.5.5.1 None

A.5.6 Description of Tested Assembly

A.5.6.1 The test specimen consisted of a non-loadbearing Speedwall® panel wall 3000mm high by 3000mm wide. The wall comprised eleven interlocking panels (tongue and groove), each 285mm wide × 76mm thick × 2900mm high and one interlocking panel 250mm wide.

A.5.6.2 The panels consisted of a lightweight concrete core with 0.44mm thick galvanised steel sheathing to form a 76mm thick panel.

A.5.6.3 The 64mm × 55mm × 1.15mm thick steel angles were fixed to the top, base and left hand perimeter edges of the wall with bolts at 500mm centres. The angels were sealed to the specimen frame and the panels with Bostik Firecaulk fire rated acrylic sealant.

A.5.6.4 The panel were fixed together and to the angles with Hilti DB7 6mm diameter fasteners. The panels were fixed to the angles at the top and base at each end of the panel on each face. Along the left hand vertical edge the panel was fixed to the angle at 400-450mm centres. Each panel was fixed to the nest at 1000mm centres.

A.5.6.5 A 10mm expansion gap was provided between the top edge of the panels and the specimen frame, and filled with a bead of sealant. A second set of angles were screws fixed to the unexposed face of the panels at the top, base and left hand side with Hilti DB7 fasteners at 400-450mm centres and a bead of sealant, and to the specimen frame at 500m centres and a bead of sealant.

A.5.7 Instrumentation

A.5.7.1 The test instrumentation was in accordance with AS 1530.4-2005.

A.5.8 Results

A.5.8.1 The test was terminated at 245 minutes.

A.5.8.2 The ambient temperature at the start of the test was 16°C.

A.5.8.3 The specimen achieved the result given in Table A.5.

Table A.5: Specimen Performance in Test FR 3754

Criteria	Performance
Structural Adequacy	Not applicable
Integrity	No failure at 245 minutes
Insulation	Failure at 123 minutes

A.6 TEST REPORT – EWFA 39386200.1

A.6.1 Report Sponsor

A.6.1.1 Speedpanel Vic, Pty. Ltd., 421 Dorset Road, Bayswater, Vic 3153.

A.6.2 Test Laboratory

A.6.2.1 Exova Warringtonfire Aus Pty Ltd, Unit 2, 409-411 Hammond Road, Dandenong, VIC 3175.

A.6.3 Test Date

A.6.3.1 The test was conducted on 22nd December 2015.

A.6.4 Test standard prescribed

A.6.4.1 The test was stated to be conducted in accordance with AS 1530.4-2014

A.6.5 Variations to Test Standard

A.6.5.1 The test specimen size was nominally 1.2m x 1.2m in size, as opposed to the full scale size of 3m x 3m specified in AS1530.4-2014

A.6.6 Description of Tested Assembly

A.6.6.1 The specimen was comprised of 6-off 78mm thick Speedpanel panels, each installed perpendicular to one other to form 5-off vertical right angle corner joints. The Speedpanel panels were capped with 83mm C-tracks on all sides. The side C-tracks were secured to the top and bottom C-tracks with 2-off 10 gauge × 30mm long self-drilling screws. The side C-tracks were secured to the panels with 30mm long screws near the mid-height of the specimen. The top and bottom C-tracks were secured to the concrete lintel and sill with 2-off masonry anchors per section, 50mm away from the edges of the panels.

A.6.6.2 Selleys Fireblock mastic was applied on the interface between the Speedpanel panel joints as well as between the C-tracks and the concrete lintel and sill. The gaps between C-tracks and the panels on both exposed and unexposed face were sealed by the Selleys Fireblock mastic.

A.6.6.3 The Selleys Fireblock mastic fillets were applied to inner corners of the specimen from the bottom of the specimen up to 500mm high on both exposed side and unexposed side.

A.6.6.4 Four different fire protection systems were applied in the cavity between the C-track and the side edge of the Speedpanel panels.

A.6.6.5 All panels had the Speedpanel plastic film still attached to the unexposed and exposed faces and the plastic film was clear with a thickness less than 1mm thick.

A.6.6.6 The sealant applied to the specimen was applied on top of the plastic at the normal Speedpanel track-wall and corner edges locations.

A.6.7 Instrumentation

A.6.7.1 The test instrumentation was stated to be in accordance with AS 1530.4-2014.

A.6.8 Results

A.6.8.1 The test was terminated at 135 minutes.

A.6.8.2 The ambient temperature at the start of the test was 30°C and did not vary significantly throughout the duration of the test.

A.6.8.3 The maximum temperature recorded on the unexposed side of the Speedpanel panel face after 120 minutes was approximately 400°C.

A.6.8.4 The specimen did not fail integrity for the 135-minute duration of the test.

A.6.8.5 No flaming or smoking was observed on the unexposed face, for the duration of the test, even with the Speedpanel plastic film being left on the panels.

A.6.8.6 The specimen achieved the result given in Table A.6.

Table A.6: Specimen Performance in Test EWFA 39386200.1

Corner	Criteria	Performance
A	Structural Adequacy	Not applicable
	Integrity	No failure at 135 minutes
	Insulation	Failure at 58 minutes
B	Structural Adequacy	Not applicable
	Integrity	No failure at 135 minutes
	Insulation	Failure at 32 minutes
C	Structural Adequacy	Not applicable
	Integrity	No failure at 135 minutes
	Insulation	Failure at 43 minutes
D	Structural Adequacy	Not applicable
	Integrity	No failure at 135 minutes
	Insulation	Failure at 30 minutes
E	Structural Adequacy	Not applicable
	Integrity	No failure at 135 minutes
	Insulation	Failure at 46 minutes
AS	Structural Adequacy	Not applicable
	Integrity	No failure at 135 minutes
	Insulation	Failure at 83 minutes
BS	Structural Adequacy	Not applicable
	Integrity	No failure at 135 minutes
	Insulation	Failure at 45 minutes
CS	Structural Adequacy	Not applicable
	Integrity	No failure at 135 minutes
	Insulation	Failure at 48 minutes
DS	Structural Adequacy	Not applicable
	Integrity	No failure at 135 minutes
	Insulation	Failure at 40 minutes
ES	Structural Adequacy	Not applicable
	Integrity	No failure at 135 minutes
	Insulation	Failure at 49 minutes

A.7 TEST REPORT – FNC 9204

A.7.1 Report Sponsor

A.7.1.1 Speedpanel Vic, Pty. Ltd., 89-91 Canterbury Road, Kilsyth VIC, Australia.

A.7.2 Test Laboratory

A.7.2.1 CSIRO, 14 Julius Avenue, Riverside Corporate Park, North Ryde NSW 2113.

A.7.3 Test Date

A.7.3.1 The test was conducted on 10th December 2008.

A.7.4 Test standard prescribed

A.7.4.1 The test was stated to be conducted in accordance with ISO 1182:2002 and AS1530.1-1994

A.7.5 Variations to Test Standard

A.7.5.1 There were no noted variations to the test standard

A.7.6 Description of Tested Assembly

A.7.6.1 The test comprised of 5 cylindrical samples of Speedpanel (44mm diameter and 50mm long) with a standard core density of 435kg/m³ and 0.4mm BMT steel panel skin. On both sides of the outer steel there was a total layer of 25µm comprising primer (5µm) and paint (20µm).

A.7.6.2 Specimens were conditioned as specified in EN 13228. Afterwards they were dried in a ventilated oven at 60°C ± 5°C for between 20-24 hours, then cooled to ambient temperature in a desiccator prior to testing.

A.7.6.3 The average reading of the results from the 5 samples was taken as final result

A.7.7 Instrumentation

A.7.7.1 The test instrumentation was stated to be in accordance with ISO 1182:2002.

A.7.8 Results

A.7.8.1 The mean furnace thermocouple temperature rise was 3.4°C.

A.7.8.2 The mean specimen centre thermocouple temperature rise was 1.1°C (significantly below 50°C)

A.7.8.3 The mean specimen surface thermocouple temperature rise was 2.0°C (significantly below 50°C)

A.7.8.4 The mean duration of sustained flaming was 0 seconds (i.e. no flaming)

A.7.8.5 The mean mass loss was 24.6%

A.7.8.6 The specimen achieved the designation **non-combustible**.

A.8 TEST REPORT – BWA 2257600.4

A.8.1 Test Sponsor

A.8.1.1 Speedpanel Vic, Pty. Ltd., 89-91 Canterbury Road, Kilsyth, Vic 3137.

A.8.2 Test Laboratory

A.8.2.1 Bodycote Warringtonfire Aus Pty Ltd, Unit 2, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia.

A.8.3 Test Date

A.8.3.1 The test was conducted on 6th March 2008.

A.8.4 Test standard prescribed

A.8.4.1 The test was conducted in accordance with AS 1530.4-2005 Sections 2 & 3.

A.8.5 Variations to Test Standard

A.8.5.1 None.

A.8.6 Description of Tested Assembly

A.8.6.1 The test specimen comprised a nominal 3000mm wide x 3000mm high x 78mm thick non-loadbearing wall comprising horizontally oriented 78mm thick Speedpanel panels that incorporated a tongue-and-groove detail on their vertical edges. Each panel comprised a 0.2mm thick galvanized mild steel facing on all sides with an aerated concrete core.

A.8.6.2 The perimeter framing comprised 83mm wide x 54mm high x 1.19mm thick steel C-tracks on all edges of the wall system. The C-track was fixed to the concrete block surround at both vertical edges with Hilti HAS M8 x 57/-/5 masonry anchors at 450mm centres. The top and bottom C-track was not fixed to the concrete block surround.

A.8.6.3 The panels were fixed to the C-track on the vertical edges at every second panel join (500mm centres) on both exposed and unexposed sides with 35mm long self-tapping screws. Both the top and bottom panels were fixed to the top and bottom C-track at 450mm centres with 35mm long self-tapping screws.

A.8.6.4 Fire-rated acrylic sealant was used to seal gaps on both sides of the wall for the top half of the specimen. Fire-rated acrylic sealant was used to seal gaps on the exposed side only for the bottom quarter of the specimen. Fire-rated acrylic sealant was used to seal gaps on the unexposed side only for the remaining quarter of the specimen.

A.8.7 Instrumentation

A.8.7.1 The test instrumentation was in accordance with AS 1530.4-2005.

A.8.8 Pre-Conditioning

A.8.8.1 No pre-conditioning was required.

A.8.9 Results

A.8.9.1 The test was terminated at 242 minutes.

A.8.9.2 The ambient temperature at the start of the test was 29°C and varied between 29°C and 30°C during the test.

A.8.9.3 The specimen achieved the result given in Table A.8.

Table A.8: Specimen Performance in Test BWA 2257600.4

Component	Criteria	Performance
Panel	Structural Adequacy	Not applicable
	Integrity	No failure at 128 minutes
	Insulation	Failure at 117 minutes
Perimeter	Structural Adequacy	Not applicable
	Integrity	No failure at 242 minutes
	Insulation	Failure at 23 minutes

A.9 TEST REPORT – EWFA 36370200.2

A.9.1 Report Sponsor

A.9.1.1 Honeywell Automation & Control Solutions, 218 Richmond Rd, Marleston SA 5033.

A.9.2 Test Laboratory

A.9.2.1 Exova Warringtonfire Aus Pty Ltd, Unit 2, 409-411 Hammond Road, Dandenong, VIC 3175.

A.9.3 Test Date

A.9.3.1 The test was conducted on 13th July 2015.

A.9.4 Test standard prescribed

A.9.4.1 The test was stated to be conducted in accordance with AS 1530.4-2005.

A.9.5 Variations to Test Standard

A.9.5.1 The pressure was 1Pa above the limits prescribed in the standard during the 5-10 minute period. The pressure and temperature were within the limits for rest of the test duration and due to the nature of the specimen this overpressure is unlikely to have affected the outcome of the test.

A.9.5.2 The cable lengths protruding from the exposed and unexposed sides of the specimen were less than the 500mm prescribed by the standard for several specimens.

A.9.6 Description of Tested Assembly

A.9.6.1 The test assembly comprised a nominally 1600mm wide × 1600mm high wall with 2 sections. The West half of the wall was 78mm Speedpanel wall with 16mm Gyprock EC08™ Complete plasterboard on the exposed side only. The east half of the wall was 92mm steel stud with 2 layers of 16mm Gyprock EC08™ Complete plasterboard on each side.

A.9.6.2 The plastic protective coating on the west wall (Speedpanel) panels was not removed for the test.

A.9.6.3 The west wall (Speedpanel) incorporated 12 services and east wall (Plasterboard) incorporated 11 services.

A.9.6.4 The wall assembly was asymmetric.

A.9.7 Instrumentation

A.9.7.1 The test instrumentation was in accordance with AS 1530.4-2005.

A.9.8 Results

A.9.8.1 The test was terminated at 238 minutes.

A.9.8.2 The ambient temperature at the start of the test was 14°C and varied between 13°C and 16°C during the test.

A.9.8.3 No flaming or smoking was observed on the unexposed face of the west wall (Speedpanel), for the duration of the test, even with the Speedpanel plastic film being left on the panels.

A.9.8.4 The specimen achieved the result in Table A.9. The 12 services penetrating the west wall (Speedpanel) are services A to L inclusive.

Table A.9: Specimen Performance in Test EWFA 36370200.2

Service	Criteria	Performance
A	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 194 minutes
	FRL	**Not Assigned**
B	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes

Service	Criteria	Performance
	Insulation	Failure at 236 minutes
	FRL	**Not Assigned**
C	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 230 minutes
	FRL	**Not Assigned**
D	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 197 minutes
	FRL	**Not Assigned**
E	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	No failure at 238 minutes
	FRL	**-/180/180**
F	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	No failure at 238 minutes
	FRL	**-/180/180**
G	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Not measured
	FRL	**-/180/-**
H	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Not measured
	FRL	**-/180/-**
I	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 216 minutes
	FRL	**Not Assigned**
J	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 210 minutes
	FRL	**-/180/180**
K	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	No failure at 238 minutes
	FRL	**-/180/180**
L	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 165 minutes
	FRL	**-/180/120**
M	Structural Adequacy	Not applicable

Service	Criteria	Performance
	Integrity	No failure at 238 minutes
	Insulation	Failure at 222 minutes
	FRL	**Not Assigned**
N	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 214 minutes
	FRL	**Not Assigned**
O	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Not measured
	FRL	**-/180/-**
P	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 211 minutes
	FRL	**Not Assigned**
Q	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 130 minutes
	FRL	**-/180/120**
R	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 224 minutes
	FRL	**-/180/180**
S	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 155 minutes
	FRL	**-/180/120**
T	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 232 minutes
	FRL	**-/180/180**
U	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 232 minutes
	FRL	**-/180/180**
V	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	Failure at 227 minutes
	FRL	**-/180/180**
W	Structural Adequacy	Not applicable
	Integrity	No failure at 238 minutes
	Insulation	No failure at 238 minutes
	FRL	**-/180/180**

A.10 RELEVANCE OF AS1530.4-2014 TEST DATA TO AS1530.4-2005

A.10.1 General

A.10.1.1 The fire resistance test EWFA 39386200.1 was conducted utilising the testing conditions of AS1530.4-2014, which differs from AS1530.4-2005. The effect these differences have on the fire resistance performance of the referenced test specimens is discussed below.

A.10.2 Discussion

Temperature Regime

A.10.2.1 The furnace heating regime in fire resistance tests conducted in accordance with AS 1530.4-2005 follows a similar trend to that in AS 1530.4-2014.

A.10.2.2 AS1530.4-2005 specifies furnace temperature, $T_{AS15304-2005}$, to follow the following trend with time, *t*, from initial temperature T_o:

$$T_{AS15304-2005} = 345\log_{10}(8t+1)+20$$

A.10.2.3 The parameters outlining the accuracy of control of the furnace temperature in AS 1530.4-2005 and AS 1530.4-2014 are not appreciably different.

Furnace Pressure

A.10.2.4 The furnace pressure conditions for single and multiple penetration sealing systems in AS1530.4-2014 and AS1530.4-2005 are not appreciably different,

A.10.2.5 The parameters outlining the accuracy of control of the furnace pressure in AS1530.4-2005 and AS1530.4-2014 are not appreciably different.

Performance Criteria

A.10.2.6 AS 1530.4-2005 specifies the following performance criteria for building materials and structures:

- Structural Adequacy (not relevant)
- Integrity
- Insulation

Integrity

A.10.2.7 AS1530.4-2014 stipulates in addition to the 20mm thick x 100mm x 100mm cotton pads additional cotton pads shall be provided with a reduced 30mm x 30mm x 20mm with additional wire frame holder shall be used to determine integrity failure.

A.10.2.8 Apart from the above variation, the failure criteria for integrity in AS1530.4-2014 and AS1530.4-2005 are not appreciably different.

Insulation

A.10.2.9 The positions of thermocouples and failure criteria for insulation in AS 1530.4-2005 and AS 1530.4-2014 are not appreciably different.

A.10.3 Application of Test Data to AS1530.4-2005.

A.10.3.1 There is a difference in cotton pad size between standards, however it is confirmed that the variation does not affect the integrity performance of the tested penetrations in the referenced tests for at least 120 minutes.

A.10.3.2 Based on the above, discussion and in absence of any foreseeable integrity and insulation risk, it is considered that the results relating to the integrity and insulation performance of the specimens tested in EWFA 39386200.1 can be used to assess the integrity and insulation performance in accordance with AS1530.4-2005.

A.11 RELEVANCE OF AS1530.4-1997 TEST DATA TO AS1530.4-2005

A.11.1 General

A.11.1.1 The fire resistance test FR3754 was conducted utilising the testing conditions of AS1530.4-1997, which differs from AS1530.4-2005. The effect these differences have on the fire resistance performance of the referenced test specimens is discussed below.

A.11.2 Discussion

Furnace Temperature Measurement

A.11.2.1 The specification for furnace thermocouples in AS1530.4-2005 and AS1530.4-1997 are not appreciably different.

Furnace Temperature Regime

A.11.2.2 AS1530.4-2005 specifies furnace temperature, $T_{AS15304-2005}$, to follow the following trend with time, *t*, from initial temperature T_o:

$$T_{AS15304-2005} = 345\log_{10}(8t+1)+20$$

A.11.2.3 AS1530.4-1997 specifies furnace temperature, $T_{AS15304-1997}$, to follow the following trend with time, *t*, from initial temperature T_o.

$$T_{AS15304-1997} - T_o = 345\log_{10}(8t+1), \text{ with } 10^oC \le T_o \le 40^oC$$

A.11.2.4 The parameters outlining the accuracy of control of the furnace temperature in AS1530.4-2005 and AS1530.4-1997 are not appreciably different.

Furnace Pressure Regime

A.11.2.5 AS1530.4-2005 specifies that the linear pressure gradient that exists over the height of the furnace shall have an average value of 8.0Pa per metre height, and controlled so that the pressure does not deviate by more than ±5Pa for time 5<t<10 minutes and by ±3Pa for time t≥10 minutes.

A.11.2.6 AS1530.4-1997 specifies that this linear pressure gradient over the height of the furnace shall have an average value of 8.5Pa per metre height, and controlled so that the pressure does not deviate by more than ±5Pa for time 5<t<10 minutes and by ±3Pa for time t≥10 minutes.

A.11.2.7 The parameters outlining the accuracy of control of the furnace temperature in AS1530.4-2005 and AS1530.4-1997 are not appreciably different.

Specimen Temperature Measurement

A.11.2.8 AS 1530.4-2005 specifies specimen thermocouples as Type K, MIMS thermocouples with a stainless steel sheaf having a wire diameter less than 1 mm and an overall diameter of 3mm. The thermocouples shall be supported by a heat-resisting tube with the measuring junction protruding a minimum 25 mm. Each thermocouple shall have the tail of its measuring junction soldered to the centre of a 12mm diameter x 0.2mm thick copper disc. The disc shall be covered by 30 ± 0.5mm x 30 ± 0.5mm x 2.0 ± 0.5mm thick inorganic insulating pad having a density of 900 ± 100kg/m3. Each thermocouple shall be replaced every 40h.

A.11.2.9 AS 1530.4-1997 specifies specimen thermocouples as Type K, MIMS thermocouples with a stainless steel sheaf having a wire diameter less than 1 mm and an overall diameter of 3mm. The thermocouples shall be supported by a heat-resisting tube with the measuring junction protruding a minimum 25 mm. Each thermocouple shall have the tail of its measuring junction soldered to the centre of a 12mm diameter x 0.2mm thick copper disc. The disc shall be covered by an oven-dry pad, not less than 30mm square, made from material having a value of √(kρc) not greater than 600 at 150°C, and of such thickness as will give a thermal resistance (R = t/K) of 0.015 K/W – 0.025 K/W at 150°C. Each thermocouple shall be recalibrated every 40 hours and replaced when they exceed the requirements of standard tolerance for thermocouples.

A.11.2.10 The parameters outlining the accuracy of specimen temperature measurement in AS1530.4-2005 and AS1530.4-1997 are not appreciably different.

Integrity Performance Criteria

A.11.2.11 AS1530.4-2005 deems integrity failure to have occurred upon collapse, the development of cracks, fissures or other openings through which flames or hot gases can pass, sustained flaming (exceeding 10 seconds) on the non-fire side, ignition of an applied cotton pad within 30 seconds of application or if a 6mm gap gauge can protrude into the furnace and can be moved 150mm along the gap (not applicable at the sill), or if a 25mm gap gauge can protrude into the furnace.

A.11.2.12 AS 1530.4-1997 deems integrity failure to occur upon collapse, the development of cracks, fissures, or other openings through which flames or hot gases can pass.

A.11.2.13 By inspection of test observation of test FR3754, there were no splits in the material at 120 minutes, and no gaps or cracks visible at 240 minutes.

A.11.2.14 It was observed that no sealant fell from the joints and it remained in contact with the edges of the concrete section for the 245 minutes test duration. Data collected from thermocouples located on the seals indicate that surface temperatures did not exceed 275 degrees which is not considered sufficient to cause flaming of a cotton pad.

A.11.2.15 There were no observations made for the specimen relevant to this assessment in FR3754 which are considered likely to have warranted the application of a cotton pad.

A.11.2.16 Apart from the above variation, the failure criteria for integrity in AS1530.4-2005 and AS1530.4-1997 are not appreciably different.

Insulation Performance Criteria

A.11.2.17 The positions of thermocouples and failure criteria for insulation in AS 1530.4-2005 and AS 1530.4-1997 are not appreciably different.

A.11.3 Application of Test Data to AS1530.4-2005

A.11.3.1 The minor variations in furnace heating regimes and specimen thermocouple specification are not considered likely to significantly affect the behaviour of the specimens relevant to this assessment.

A.11.3.2 In light of the above, it is considered that the integrity and insulation behaviour of the specimens tested in FR3754 can be used to assess the likely performance if the specimen was tested in accordance with AS1530.4-2005.

APPENDIX B - ASSESSMENT OF SPECIFIC VARIATIONS

B.1 LEAVING THE 60µM THICK SPEEDPANEL PLASTIC FILM ON THE 51MM, 64MM AND 78MM THICK SPEEDPANEL PANELS WHEN INSTALLED IN THE RANGE OF SPEEDPANEL SYSTEMS

B.1.1 Proposal

B.1.1.1 The proposed constructions are Speedpanel 51mm, 64mm and 78mm thick vertically and horizontal orientated walls as tested in BWA 2257600, EWFA 2848300.2 and EWFA 2736002.1 and all Speedpanel tested and assessed configurations inclusive of shaft systems, scissors stairs, wall, ceiling, penetration services, aperture services and doorsets with consideration given to the option of leaving the Speedpanel 60µm thick protective plastic film on the product during install and in situ thereafter without negatively impacting the fire performance of the Speedpanel system.

B.1.2 Discussion

FRL Performance of the Speedpanel wall with the 60µm thick plastic film left on either side or both sides of the panel

B.1.2.1 Within test report EWFA 39386200.1 the specimen wall comprised of five corners with different interface configurations and all panels had the Speedpanel 60µm thick plastic still attached to the exposed and unexposed face of the panel.

B.1.2.2 The specimen was subjected to the furnace conditions of AS1530.4-2014 and for the 135 minutes duration of the test, the 60µm thick plastic film did not exhibit any smoke, melting, flaming or other adverse effects that impacted the FRL performance of the specimen in terms of integrity.

B.1.2.3 The maximum temperature of the panels after 120 minutes varied between 93°C and 508°C on the unexposed panel face.

B.1.2.4 No noticeable impact on the sealant, discoloration, melting, flaming, smoke or bubbling of the plastic was observed for the 135 minutes duration of the test.

B.1.2.5 Similarly in test report EWFA 36370200.2 the specimen comprised a test of a vertically orientated nominally 1600mm wide × 1600mm high wall with 2 sections. The West half of the wall was 78mm Speedpanel wall with 16mm Gyprock EC08™ Complete plasterboard on the exposed side only. The plastic protective coating on the west (Speedpanel) wall panels (both unexposed and exposed faces) was not removed for the test. The east half of the wall was 92mm steel stud with 2 layers of 16mm Gyprock EC08™ Complete plasterboard on each side. The west wall (Speedpanel) incorporated 12 services and east wall (Plasterboard) incorporated 11 services.

B.1.2.6 No noticeable impact on the sealant, discoloration, melting, flaming, smoke or bubbling of the plastic was observed for the 238 minutes duration of the test.

B.1.2.7 In both test outcomes, it is considered that where the panel face failed thermally was not due to the plastic film being left on but rather the orientation of new corner details being tested.

Speedpanel designated a non-combustible product in accordance with AS1530.1-1994

B.1.2.8 Based on the results of test report FNC 9204 and certificate of test FNC 9205, Speedpanel is considered to be a non-combustible product.

Compliance with Section C1.10, NCC 2016 - Fire hazard properties

B.1.2.9 As Speedpanel exceeds the definition of ‘a fire protective covering’ i.e. ‘*other material not less fire-protective than 13mm fire-protective grade plasterboard*”, compliance with specification C1.10 is not a requirement.

Compliance with section C1.12, NCC 2016 – Non-combustible materials

B.1.2.10 It is permitted under section C1.12 for materials, though combustible or containing combustible fibres to be used wherever a non-combustible material is required.

B.1.2.11 These materials include plasterboard (which is lined with paper) and "*Pre-finished metal sheeting having a combustible surface finish not exceeding 1mm and where the Spread-of-Flame Index of the product is not greater than 0"* [NCC 2016, Section C1.12 (e)].

B.1.2.12 As Speedpanel comprises a core of aerated concrete encased in a steel skin and has been determined as a non-combustible product through testing (even when coated with primer and paint), it is considered that NCC 2016, Section C1.12 (e) applies to all three thicknesses of Speedpanels (51mm, 64mm and 78mm nominal thicknesses), and therefore the Speedpanel plastic covering when left on the Speedpanel will satisfy the minimum requirement of Section C of the BCA.

B.1.3 Conclusion

B.1.3.1 It is considered that, based on the supporting test reports and criteria defined in the NCC 2016, Section C, the proposed construction of Speedpanel 51mm, 64mm and 78mm thick vertically and horizontal orientated walls, as tested in BWA 2257600, EWFA 2848300.2 and EWFA 2736002.1, and all Speedpanel tested and assessed configurations, inclusive of shaft systems, scissors stairs, wall, ceiling, penetration services, aperture services and doorsets, with consideration given to the option of leaving the Speedpanel protective plastic film which is 60µm (significantly less than 1mm) on the product, during install and in situ thereafter, will not negatively impact the fire resistance performance of the relevant Speedpanel system. This includes no detrimental impact to the performance of the Speedpanel system whereby any possible beads of sealant between the protective film covered panel face intersect with any part of a C-Track, angle or J-Track.