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<b>EWFA CERTIFICATE OF ASSESSMENT</b>	<b>CERTIFICATE No: SFC FAS180452c.1 Page 1 of 2</b>
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Report Sponsor	Certificate Issue Date	Product Details
Aleal Marketing Sdn, Bhd. Lot 2291, Jalan Kampung Baru, Kg. Baru Sungai Buloh, 47000 Selangor De, Malaysia.	<b>15 October 2018</b>	Aleal AS-202 Fire Retardant Silicone sealant

**Introduction**

The element of construction described below was assessed by this laboratory on behalf of the test sponsor in accordance with the stated test standard and achieved the results stated below. Refer to the referenced Assessment Report(s) or Regulatory Information Report(s) for the complete description of the assessment construction.

Referenced Assessment Report	Test Methods	Report Issue Date	Report Validity Date
FAS180452c.1	AS 1530.4:2014	15 October 2018	31 October 2023

**Description of Assessment Product and Performance**



The scope of this assessment is limited to the fire resistance of Aleal AS-202 Fire Retardant Silicone sealant protecting control joints in walls and floors if tested in accordance with AS1530.4 – 2014 and assessed in accordance with AS4072.1-2005.

The proposed construction shall be as tested in EWFA 53596800d.2, EWFA 43878800g.1 and EWFA 53596801d.1 in accordance with EN-1366-4:2006 and shall be assessed as if tested in accordance with AS 1530.4-2014 and assessed to AS 4072.1-2005 for wall and floor constructions and subject to following variations:

- Floors made from a minimum 250 mm thick concrete.
- Walls constructed from minimum 250 mm thick masonry, concrete or AAC.
- Walls with sealant at the exposed and unexposed side, exposed side only and unexposed side only.

**Conditions/ Validity**

- THIS CERTIFICATE IS PROVIDED FOR GENERAL INFORMATION ONLY AND DOES NOT COMPLY WITH THE REGULATORY REQUIREMENTS FOR EVIDENCE OF COMPLIANCE.
- Reference should be made to the relevant test report or regulatory information report to determine the applicability of the test result to a proposed installation. Full details of the constructions and justification for the conclusions given, along with the validity statements, are given in the assessment reports.
- The results of these fire tests may be used to assess fire hazard, but it should be recognized that a single test method will not provide a full assessment of fire hazard under all conditions.

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**Description of assessed product and performance (Continued)**

Table 1 Assessment summary for control joints (vertical and horizontal) in walls

Control Joint Width	Minimum Sealant Depth	Backing Material	AS-202 Sealant location	Exposure	FRL
(mm)	(mm)				
50	25	Polyethylene Backing Rod	Exposed and unexposed	Either side	-/240/120
30	30				-/300/240
30	20				-/300/120
30	15				-/300/180
30	15		Exposed	One side only	-/0/0
50	25		Unexposed		-/240/120
30	15				-/300/90
12	6				-/300/300

Table 2 Assessment summary for control joints in concrete floors (minimum 250 mm thickness)

Control Joint Width	Minimum Sealant Depth	Backing Material	AS-202 Sealant location	Exposure	FRL
(mm)	(mm)				
50	25	Polyethylene Backing Rod	Exposed and Unexposed	Either side	-/300/120
30	15				-/300/90
12	6				-/300/300
50	25		Unexposed	One side only	-/300/120
30	15				-/300/90
12	6				-/300/300

Refer to the referenced assessment report(s) or Regulatory Information Report(s) for a complete description of the assessed construction.



## **ASSESSMENT REPORT**

An assessment on the fire resistance of Alseal 'AS-202' Fire Retardant Silicone sealant if tested in accordance with AS1540.4-2014 and assessed in accordance with AS4072.1-2005.

### **EWFA Report No:**

FAS180452c.1

### **Report Sponsor:**

Alseal Marketing Sdn, Bhd.  
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## DOCUMENT REVISION STATUS

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## 1 INTRODUCTION

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This report presents an assessment on the fire resistance of Alseal AS-202 Fire Retardant sealants protecting control joints in walls and floors if tested in accordance with AS1530.4 – 2014 and assessed in accordance with AS4072.1-2005.

The tested prototypes described in Section 2 of this report, when subject to the proposed variations described in Section 3, are to perform satisfactorily if tested in accordance with the referenced 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, 8 and 9 of this report.

Summaries of the test data on which this assessment is based are provided in Appendix A. A summary of the critical issues leading to the assessment conclusions including the main points of argument are included in Appendix B.

## 2 TESTED PROTOTYPES

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This assessment is based on reference tests EWFA 53596800d.2, EWFA 43878800g.1 and EWFA 53596801d.1, being tests on the Alseal AS-202 Fire Retardant sealant protecting control joints in 250 mm thick Hebel AAC walls and floor respectively. The tests were conducted in accordance with EN 1366-4-2006. The test was sponsored by Alseal Marketing Sdn, Bhd and was conducted by Exova Warringtonfire Aus Pty Ltd.

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

## 3 VARIATION TO TESTED PROTOTYPES

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The proposed construction shall be as tested in EWFA 53596800d.2, EWFA 43878800g.1 and EWFA 53596801d.1 in accordance with EN-1366-4:2006 and shall be assessed as if tested in accordance with AS 1530.4-2014 and assessed to AS 4072.1-2005 for wall and floor constructions and subject to following variations:

- Floors made from a minimum 250 mm thick concrete.
- Walls constructed from minimum 250 mm thick masonry, concrete or AAC.
- Walls with sealant at the exposed and unexposed side, exposed side only and unexposed side only.

## 4 REFERENCED TEST PROCEDURES

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This report is prepared with reference to the requirements of AS1530.4-2014 Sections 2 and 10 and AS 4072.1-2005 as appropriate for control joints.

## 5 FORMAL ASSESSMENT SUMMARY

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On the basis of the discussion presented in this report, it is the opinion of this testing authority that if the tested prototype described in Section 2 had been varied as in Section 3, it will achieve the fire resistance levels as stated below if tested in accordance with the test method referenced in Section 4 when subject to the requirements of Section 7.

Table 1 Assessment summary for control joints (vertical and horizontal) in walls

Control Joint Width (mm)	Minimum Sealant Depth (mm)	Backing Material	AS-202 Sealant location	Exposure	FRL
50	25	Polyethylene Backing Rod	Exposed and unexposed	Either side	-/240/120
30	30				-/300/240
30	20				-/300/120
30	15				-/300/180
30	15		Exposed	One side only	-/0/0
50	25		Unexposed		-/240/120
30	15				-/300/90
12	6				-/300/300

Note: Wall shall be of minimum 250 mm thickness concrete/masonry or AAC

Table 2 Assessment summary for control joints in concrete floors (minimum 250 mm thickness)

Control Joint Width (mm)	Minimum Sealant Depth (mm)	Backing Material	AS-202 Sealant location	Exposure	FRL
50	25	Polyethylene Backing Rod	Exposed and Unexposed	Either side	-/300/120
30	15				-/300/90
12	6				-/300/300
50	25		Unexposed	One side only	-/300/120
30	15				-/300/90
12	6				-/300/300

## 6 DIRECT FIELD OF APPLICATION

The results of the referenced assessment are applicable to control joints in walls exposed to fire from either side unless stated otherwise, or control joints in floors exposed to fire from the underside only. The results of this assessment report are based on actual test data and the scope is limited to specifications indicated in Section 3 and discussed in Appendix B.

## 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 AS1530.4-2014.

All services shall be supported in the way in which they are assessed as described in Section 3. 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

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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

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### 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**

Prepared by:

Reviewed by:



Tanmay Bhat



Hon Wong

**9.4 DATE OF ISSUE**

15 October 2018

**9.5 EXPIRY DATE**

31/10/2023

## APPENDIX A. SUMMARY OF SUPPORTING DATA

### A.1 TEST REPORT – EWFA 43878800G.1

#### A.1.1 Report Sponsor

A.1.1.1 Aseal Marketing Sdn. Bhd.

#### 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 fire resistance test was conducted on 15/06/2017

#### A.1.4 Test Standards

A.1.4.1 The test was conducted in accordance with EN1366-4: 2006

#### A.1.5 Variations to Test Method

A.1.5.1 The pressure for the 5-30, 60-5, 75-85, 110-115, 209-240, 270-275 minute period was above the limits prescribed in BS EN1366-4:2006 by up to 10 Pa. This exceeded the pressure requirement of the standard and was therefore more severe than required by the standard. The furnace pressure was below the limits stated in BS EN1366-4:2006 by 10 Pa between 134-145 minutes due to deterioration of the specimen. The change in pressure is unlikely to have invalidated the result.

#### A.1.6 General Description of Tested Specimen

A.1.6.1 The test assembly comprised of three control joints in a nominally 1584 × 1600 × 250 mm floor constructed from Hebel panels. The Hebel floor was penetrated by three control joints at a nominal length of 1000 mm. Starting on the east were control joints that were 12 mm, 30 mm, and 50 mm wide respectively, that were protected by Aseal AS-202 Fire Retardant silicone sealant. The control joints were sealed from the unexposed side at a depth of half the width of the joint.

A.1.6.2 Refer to test report for additional details.

#### A.1.7 Instrumentation

A.1.7.1 The test report states that the instrumentation was in accordance with EN 1366-2:2006

#### A.1.8 Test results

A.1.8.1 The test specimen achieved the following result when tested in accordance with EN 1366-4:2006

Table 3 Results summary for EWFA 43878800g.1

Service	Criteria	Result
D	Structural Adequacy	Not applicable
	Integrity	No failure at 301 minutes
	Insulation	Failure at 148 minutes
E	Structural Adequacy	Not applicable
	Integrity	No failure at 301 minutes
	Insulation	Failure at 97 minutes
F	Structural Adequacy	Not applicable
	Integrity	No failure at 301 minutes
	Insulation	No failure at 301 minutes

**A.2 TEST REPORT – EWFA 53596800D.2**

**A.2.1 Report Sponsor**

A.2.1.1 Aseal Marketing Sdn. Bhd.

**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 fire resistance test was conducted on 26/03/2018

**A.2.4 Test Standards**

A.2.4.1 The test was conducted in accordance with EN1366-4: 2006

**A.2.5 Variations to Test Method**

A.2.5.1 The pressure was up to 11 Pa above the limits prescribed in the standard during the 15-20, 30-35, 55-60, 80-90, 115-155, 220-225, 255-265, and 280-285 minute periods. The pressures and temperatures were within the prescribed limits for remainder of the test.

**A.2.6 General Description of Tested Specimen**

A.2.6.1 The test assembly comprised of five control joints in a nominally 1600 × 1600 × 250 mm wall constructed from Hebel panels. The control joints were protected by AS-202 Fire Retardant sealant. The control joints in service A, B, D and E were sealed from the unexposed and exposed side while that in service C was sealed at the exposed side.

A.2.6.2 Refer to test report for additional details.

**A.2.7 Instrumentation**

A.2.7.1 The test report states that the instrumentation was in accordance with EN 1366-2:2006

**A.2.8 Test results**

A.2.8.1 The test specimen achieved the following result when tested in accordance with EN 1366-4:2006

Table 4 Results summary for EWFA 53596800d.2

Service	Criteria	Result
A	Structural Adequacy	Not applicable
	Integrity	No failure at 301 minutes
	Insulation	Failure at 245 minutes
B	Structural Adequacy	Not applicable
	Integrity	No failure at 301 minutes
	Insulation	Failure at 150 minutes
C	Structural Adequacy	Not applicable
	Integrity	Failure at 28 minutes
	Insulation	Failure at 22 minutes
D	Structural Adequacy	Not applicable
	Integrity	Failure at 242 minutes
	Insulation	Failure at 159 minutes
E	Structural Adequacy	Not applicable
	Integrity	No failure at 301 minutes
	Insulation	No failure at 301 minutes

**A.3 TEST REPORT – EWFA 53596801D.1**

**A.3.1 Report Sponsor**

A.3.1.1 Alseal Marketing Sdn. Bhd.

**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 fire resistance test was conducted on 12/06/2018

**A.3.4 Test Standards**

A.3.4.1 The test was conducted in accordance with EN1366-4: 2006

**A.3.5 Variations to Test Method**

A.3.5.1 None

**A.3.6 General Description of Tested Specimen**

A.3.6.1 The test assembly comprised of one control joint in a nominally 1200 × 1200 × 250 mm floor constructed from Hebel panels. The control joint, (1000 × 30 mm) was protected by Alseal AS-202 Fire Retardant silicone sealant. The control joint was sealed from the unexposed and the exposed side at a depth of 15 mm.

A.3.6.2 Refer to test report for additional details.

**A.3.7 Instrumentation**

A.3.7.1 The test report states that the instrumentation was in accordance with EN 1366-2:2006

**A.3.8 Test results**

A.3.8.1 The test specimen achieved the following result when tested in accordance with EN 1366-4:2006

Table 5 Results summary for EWFA 53596801d.1

Service	Criteria	Result
A	Structural Adequacy	Not applicable
	Integrity	No failure at 301 minutes
	Insulation	Failure at 188 minutes

## **A.4 RELEVANCE OF EN1366-4:2006 TEST DATA WITH RESPECT TO AS 1530.4-2014**

### **A.4.1 General**

A.4.1.1 Reference is made to a fire resistance tests 53596801d.1, 53596800d.2 and 43878800g.1, conducted in accordance with EN 1366-4: 2006 with reference to EN 1363-1: 1999 as applicable. These standards differ from AS1530.4-2014.

A.4.1.2 The effects of these differences on the fire resistance performance of test specimens listed in section 3 are discussed below.

### **A.4.2 Discussion**

#### **Furnace Temperature Measurement**

A.4.2.1 The furnace thermocouples specified in AS1530.4-2005 are type K, mineral insulated metal sheathed (MIMS) with a stainless steel sheath having a wire of diameter of less than 1.0mm and an overall diameter of 3mm. The measuring junction protrudes at least 25mm from the supporting heat resistant tube.

A.4.2.2 The furnace thermocouple specified in EN1366-4:2006 shall be used as per requirements of EN1363-1:1999, made from folded steel plate that faces the furnace chamber. A thermocouple is fixed to the side of the plate facing the specimen with the thermocouple hot junction protected by a pad of insulating material.

A.4.2.3 The plate part is to be constructed from 150 ±1 mm long by 100 ±1 mm wide by 0.7 ±0.1 mm thick nickel alloy sheet strips.

A.4.2.4 The measuring junction is to consist of nickel chromium/nickel aluminium (Type K) wire as defined in IEC 60584-1, contained within mineral insulation in a heat-resisting steel alloy sheath of nominal diameter 1 mm, the hot junctions being electrically insulated from the sheath.

A.4.2.5 The thermocouple hot junction is to be fixed to the geometric centre of the plate, by a small steel strip made from the same material as the plate. The steel strip can be welded to the plate or may be screwed to it to facilitate replacement of the thermocouple. The strip should be approximately 18 mm by 6 mm if it is spot-welded to the plate, and nominally 25 mm by 6 mm if it is to be screwed to the plate. The screw is to be 2 mm in diameter.

A.4.2.6 The assembly of plate and thermocouple should be fitted with a pad of inorganic insulation material 97 ±1 mm by 97 ±1 mm by 10 ±1 mm thick with a density of 280 ±30 kg/m<sup>3</sup>.

A.4.2.7 The relative location of the furnace thermocouples for the exposed face of the specimen, for AS1530.4-2005 and EN1363.1:1999, is 100mm +10mm and 100mm +50mm respectively.

A.4.2.8 The furnace control thermocouples required by EN1363.1:1999 are less responsive than those specified by AS1530.4-2014. This variation in sensitivity can produce a potentially more onerous heating condition for specimens tested to EN1363.1:1999, particularly when the furnace temperature is changing quickly in the early stages of the test.

#### **Furnace Pressure Regime**

A.4.2.9 The heating and furnace atmosphere conditions mentioned in EN1355-4:2006 are based on requirements stated in EN 1363-1:1999.

A.4.2.10 It is a requirement of AS1530.4-2014 (and AS1530.4-2005) that the furnace be operated such that the pressure of zero be established at a height of 500 mm above the notional floor level of the specimen.

A.4.2.11 It is a requirement of EN1366-4:2006 and AS1530.4-2005 that for vertical elements, a furnace gauge pressure of 15 Pa is established at the centre of lowest penetration.

A.4.2.12 It is a requirement of AS1530.4-2014 (including the 2005 version) and for EN1363-1:1999 that for horizontal elements, a furnace gauge pressure of 20Pa is established at a height 100mm below the lowest point of the test construction.

A.4.2.13 The parameters outlining the accuracy of control of the furnace pressure in AS1530.4-2014 and EN1363-1:1999 are also not appreciably different.

#### **Integrity Performance Criteria**

A.4.2.14 The integrity criteria differ slightly between AS 1530.4-2014 and EN1363.1:1999

- A.4.2.15 While a specimen maintains its insulation performance, the specimen shall be deemed to have failed the integrity criterion in accordance with AS 1530.4-2005 if it collapses or sustains flaming or other conditions on the unexposed face, which ignite the cotton pad when applied for up to 30 seconds.
- A.4.2.16 Specimens shall be deemed to have failed the integrity criterion in accordance with AS 1530.4-2014 when any of the following occur:
- a) sustained flaming for 10 seconds
  - b) a gap forms that allows the passage of hot gases to the unexposed face and ignite the cotton pad when applied for up to 30 seconds.
  - c) a gap forms that allows the penetration of a 25mm gap gauge anywhere on the specimen
  - d) a gap forms that allows a 6mm × 150mm gap gauge to penetrate the specimen anywhere on the specimen.

A.4.2.17 Except for minor technical variations, the integrity criteria in EN1363.1:1999 are generally applied in a comparable manner.

#### **Specimen Temperature Measurement**

A.4.2.18 The specimen thermocouple specification of service penetrations is generally the same for AS1530.4-2014 and EN1366-3.

#### **Insulation Performance Criteria**

A.4.2.19 The general insulation criteria of AS 1530.4-2014 and EN1363.1:1999 are not appreciably different.

#### **A.4.3 Application of Test Data to AS 1530.4-2014**

A.4.3.1 The variations in furnace heating regimes, furnace thermocouples and the responses of the different thermocouple types to the furnace conditions are not expected to have significant effect on the outcome of the referenced fire resistance test.

A.4.3.2 The separating element (Hebel AAC panel) used in all three tests has an established FRL of 240/180/180. Some joints (Services A and E) as tested in EWFA 53596800d.2 (wall configuration) achieved performance levels of above 180 minutes for both integrity and insulation. Similar performance (Service F) was obtained in EWFA 43878800g.1 (floor configuration). In all other cases, where the performance of joints is lower than the separating element, the lowest FRL applies.

A.4.3.3 Based on the above, it is considered the performance of service penetrations in 150mm thick concrete floor will reduce 180 minutes insulation performance if tested in accordance with AS1530.4-2014.

A.4.3.4 Based on the above discussion it is considered that the results relating to the integrity and insulation performance of the referenced tests can be used as a basis to assess the FRL of the specimens if tested in accordance with AS1530.4-2014.

## APPENDIX B. ASSESSMENT OF SPECIFIC VARIATIONS

### B.1 PERFORMANCE OF CONTROL JOINTS

#### B.1.1 Proposed Construction

B.1.1.1 It is proposed that control joints protected by the Aseal AS-202 Fire Retardant sealant, and tested in accordance with EN1366-1:2006, shall achieve the required fire resistance levels mentioned in Section 5, when subjected to the following variations:

- Walls constructed from concrete and solid masonry with a minimum thickness of 250 mm shall achieve the same FRL as that when tested on an equivalent thickness AAC wall (Hebel block).
- Floors constructed from concrete, with a minimum thickness of 250 mm shall achieve the same FRL as those when tested on an equivalent thickness AAC floor panel (Hebel panel).
- A horizontal control joint in walls (vertical separating elements) sealed on both sides, shall achieve the same or higher FRL with exposure from either side, to that tested for the vertical control joint under the same conditions.
- Control joints in walls (vertical separating elements) shall achieve the same or higher FRL as those tested in the floor (horizontal separating elements) when sealed on the unexposed side.

#### Discussion

#### B.1.2 Performance of joints in concrete, masonry and AAC walls

B.1.2.1 AS 1530.4 stipulates that results obtained for sealing systems in similar types of masonry and concrete construction may be applied to separating elements manufactures from similar type of concrete or masonry within density of  $\pm 15\%$  of the tested specimen.

B.1.2.2 Both referenced tests EWFA 53596800d.2 and EWFA 53596801d.1 were performed with Hebel block walls or AAC. The results from these tests would therefore be applicable to walls constructed from brickwork or concrete with a minimum thickness of 250 mm.

#### B.1.3 Performance of joints in concrete floors slab

B.1.3.1 AS 1530.4 stipulates that results obtained for sealing systems in similar types of masonry and concrete construction may be applied to separating elements manufactures from similar type of concrete or masonry within density of  $\pm 15\%$  of the tested specimen.

B.1.3.2 The referenced tests EWFA 43878800g.1 was performed with Hebel panel floors. The results from these tests would therefore be applicable to floors constructed from concrete with a minimum thickness of 250 mm, provided the control joints are sealed on the unexposed side and to the same depths as tested in EWFA 43878800g.1.

#### B.1.4 Performance of horizontal control joints in walls sealed on both ends

B.1.4.1 Specimens tested in EWFA 53596800d.2 and EWFA 53596801d.1 consisted of multiple control joints in a 250 mm thick Hebel AAC wall, protected on both ends with the AS-202 Fire Retardant sealant.

B.1.4.2 As discussed in A.4, these results based on tests in accordance with EN1366-4:2006 would be applicable to those as if tested in accordance with AS 1530.4-2014.

B.1.4.3 The tests were carried out on vertical control joints, where the sealant must not only withstand shrinkage along the edges but also its self-weight, thereby being a more onerous scenario than a horizontal joint exposed to the same conditions.

B.1.4.4 Based on the above discussion, it would be reasonable to consider that the performance of the sealant would be equivalent if not better for horizontal linear joints of equivalent width and depth in walls, when sealed on both sides and tested in accordance with AS 1530.4-2014.

#### B.1.5 Performance of joints with sealant on the unexposed side of the wall

- B.1.5.1 Specimens tested in EWFA 43878800g.1 consisted of multiple vertical control joints in a 250 mm thick Hebel floor panel, protected on the unexposed side with the AS-202 Fire Retardant sealant.
- B.1.5.2 As discussed in A.4, these results based on tests in accordance with EN1366-4:2006 would be applicable to those as if tested in accordance with AS 1530.4-2014.
- B.1.5.3 It is considered that a test in the horizontal orientation (i.e. floor) is more onerous on the control joint compared to an equivalent test in the vertical orientation (i.e. wall) due to the overall higher pressures (and temperatures).
- B.1.5.4 Based on the above discussion, it would be reasonable to consider that the performance of the sealants if tested in the horizontal orientation would be applicable to those if tested in the vertical orientation for joints of equivalent width and depth and sealed on the unexposed side.
- B.1.6 Performance of control joints in walls sealed on both ends**
- B.1.6.1 Specimens tested in EWFA 43878800g.1 consisted of multiple control joints in a 250 mm thick Hebel floor panel, protected on the unexposed side with the AS-202 Fire Retardant sealant.
- B.1.6.2 As discussed in A.4, these results based on tests in accordance with EN1366-4:2006 would be applicable to those as if tested in accordance with AS 1530.4-2014.
- B.1.6.3 It is considered that the performance of a control joint with the sealant applied at the unexposed side only is more onerous compared to an equivalent test where the joint is sealed on both ends.
- B.1.6.4 Based on the above discussion, it would be reasonable to consider that the performance of the joints sealed on both sides will be equivalent if not better than those sealed on the unexposed side.

## **B.2 CONCLUSION**

### **B2.1.1 Based on the discussions in Section B.1, the following can be concluded:**

- Results for control joints when tested on an AAC wall (Hebel block) are applicable to walls constructed from concrete and solid masonry with a minimum thickness of 250 mm.
- Results for control joints when tested on an AAC floor panel (Hebel) are applicable to floors constructed from concrete, with a minimum thickness of 250 mm.
- A horizontal control joint protected by AS-202 Fire Retardant sealant, in walls (vertical separating elements) sealed on both sides perform similarly to an equivalent vertical control joint tested under the same conditions.
- Results for control joints (sealed on the unexposed side) protected by the AS-202 Fire Retardant sealant, tested on horizontal separating elements (floors) are applicable to equivalent joints if tested on vertical separating elements (walls).