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BRITISH BOARD OF AGRÉMENT TEST REPORT No 52291

CONCRETE CANVAS

Contents

Approved by:

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Date: 20 January 2014

Authorised by:

Stuart Sadler
(Head of Test)

Date: 20 January 2014

On behalf of the British Board of Agrément

Client: Concrete Canvas Ltd
Unit 3, Block A22
Severn Road
Treforest Industrial Estate
Pontypridd CF37 5SP

Requested by: Will Crawford

Job No: T1 52291

Work period: October 2013 – December 2013

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1 REPORT CONDITIONS

i NOTE ON ISSUE 2

Issue 2 supersedes Issue 1 and differs from the original issue of this report by changing the reference in the relevant sections of this report from Concrete Cloth to Concrete Canvas.

1.1 This Report:

- relates only to the product/system and sample/specimen thereof named and described herein
- relates only to the specified tests and test conditions described herein
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1.3 Publications, documents, specifications and similar matter that are referred to herein, are those that were current at the date of issue of this Report, except where otherwise stated.

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- individual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal.

1.6 This Report does not constitute or indicate any approval, certification or endorsement of the product/system.

2 THERMAL CYCLING

2.1 Method

Tested in accordance with BS EN 12467: 2004 *Fibre-cement flat sheets – Product specification and test methods* clause 7.4.2 Heat-rain.

2.2 Samples

BBA ref/lot	Quantity	Description
T1/52291	1	Three sections of Concrete Canvas adhesively fixed together and mechanically fixed to a supplied wooden frame

A test panel was constructed by the client measuring 1.8m x 2.1m. The panel was constructed of three separate cut sections of canvas fixed together with an overlap of approximately 120mm. Each overlap was bonded using an adhesive and then fixed to the frame using screws at approximate 300mm centres.

One of the sections was approximately 1.8m in height and approximately 1m in width was used to create a vertical join down the centre of the overall panel. Two additional sections, approximately 1m in height and 1m in width were used to create a horizontal join in the panel (see Plate 1).

Thermocouples were fitted onto the panel to control and record the temperature during the heat rain cycle.

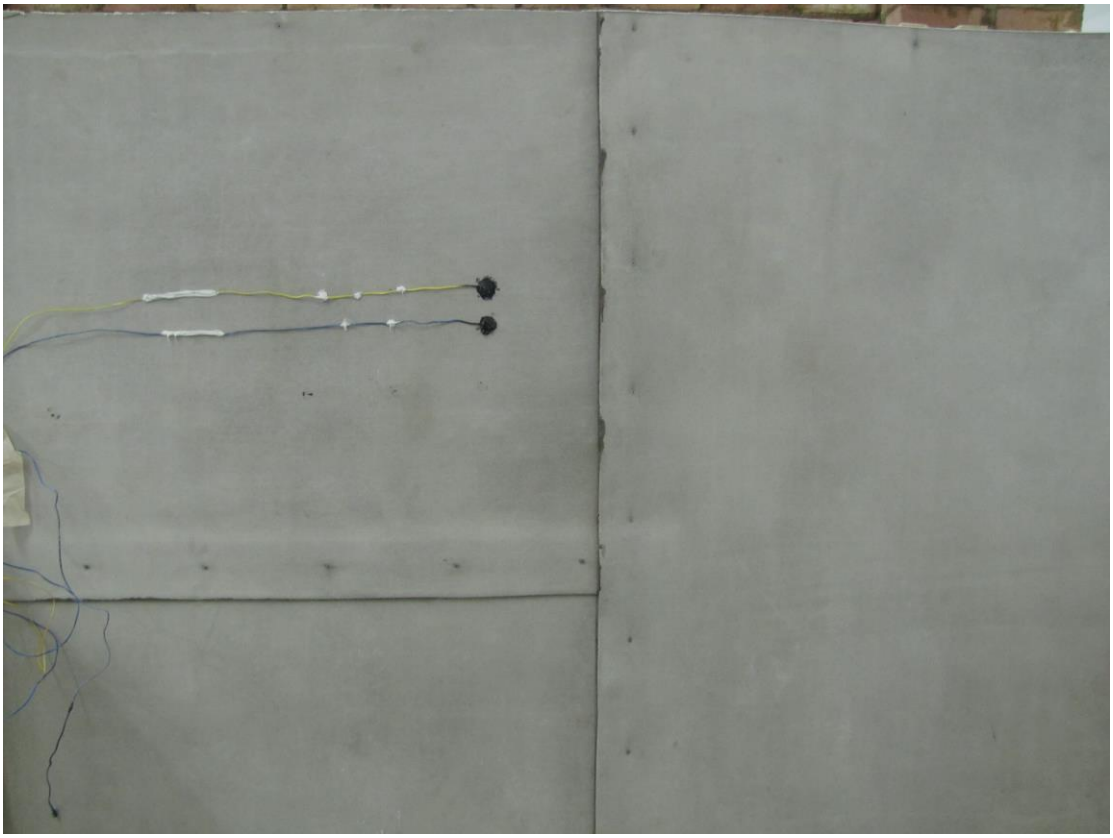

Plate 1: Frame layout with thermocouples attached

2.3 **Results**

After 50 cycles there was no damage or change in appearance to the panels.

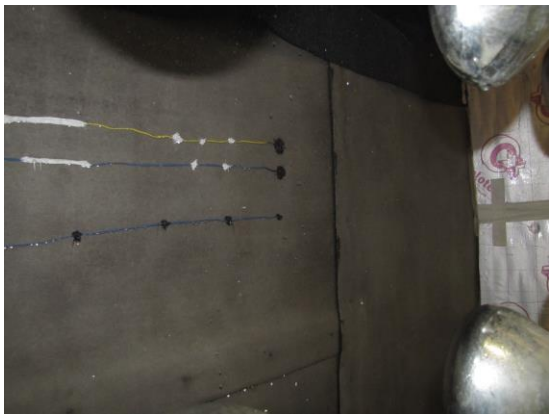

Plate 2: Test panel during rain cycling

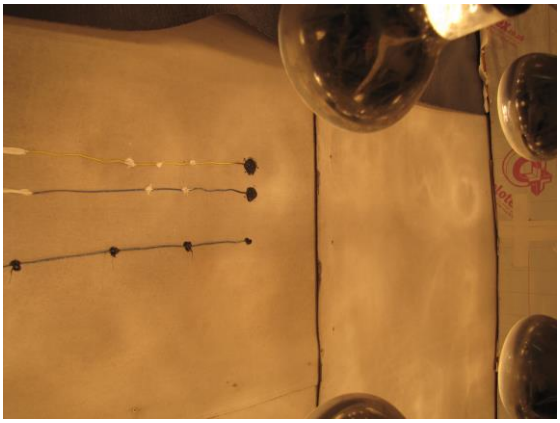

Plate 3: Test panel during heat cycling

Plate 4: Overlap of sections after heat rain

Plate 5: Overlap after heat rain cycling

3 WATER IMPERMEABILITY

3.1 Method

Tested in accordance with method based on BS EN 494 *Fibre-cement profiled sheets and fittings — Product specification and test methods* and BS EN 12467: 2004 *Fibre-cement flat sheets – Product specification and test methods.*

On completion of the thermal cycles three 420mm by 330mm specimens were cut from the panels. The specimens were then sealed into a frame with the outer layer facing upmost. The frame was filled with water to a level of 20mm above the surface of the specimen and the lower face was monitored over 24 hours and visually assessed for any signs of water penetration.

3.2 Samples

BBA ref/lot	Quantity	Description
T1/52291	3	420mm by 330mm specimens of Concrete Canvas cut from the panel on completion of the thermal cycling

3.3 Results

Specimen	Observation	Comments
A	At the start of the test small leaks were noted at the edges of the boards. After 1 hour these damp patches were visible on the underside of the board approximately 20mm from the edges. At 21 hours the specimens were inspected and no additional dampness was observed on the underside of the board. At 24 hours the boards were inspected indicating no additional dampness on the base of the board. No water penetration was noted in the centre of the specimen after 24 hours.	The leaks continued throughout the duration of the test. The frame was topped up with water after 5 and 18 hours. On inspection the dampness noted around the edge of the boards (approximately 30 mm) was assessed and attributed to a leak in the frame and not through the specimen.
B	At the start of the test small leaks were noted at the edges of the boards. After 1 hour damp patches were visible on the underside of the board approximately 20mm from the edges. At 21 hours the specimens were inspected and no additional dampness was observed on the underside of the board. At 24 hours the boards were inspected indicating no additional dampness on the base of the board. No water penetration was noted in the centre of the specimen after 24 hours.	The leaks continued throughout the duration of the test. The frame was topped up with water after 5 and 18 hours. On inspection the dampness noted around the edge of the boards (approximately 20 mm) was assessed and attributed to a leak in the frame and not through the specimen.
C	After 1 hour damp patches were visible on the underside of the board approximately 20mm from the edges. At 21 hours the specimens were inspected and no additional dampness was observed on the underside of the board. At 24 hours the boards were inspected indicating no additional dampness on the base of the board. No water penetration was noted in the centre of the specimen after 24 hours.	The leaks continued throughout the duration of the test. The frame was topped up with water after 5 and 18 hours. On inspection the dampness noted around the edge of the boards (approximately 20 mm) was assessed and attributed to a leak in the frame and not through the specimen.

Plate 6: Specimen A – Frame construction

Plate 7: Specimen A – 1 hour into test

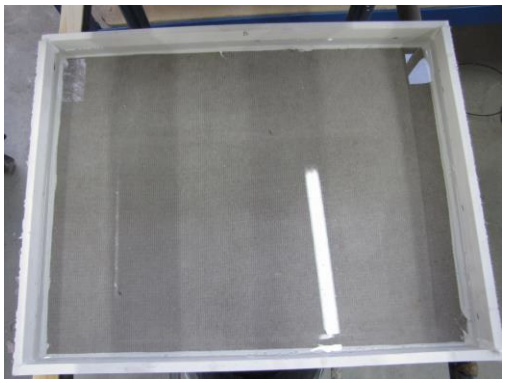

Plate 8: Specimen B - Frame construction

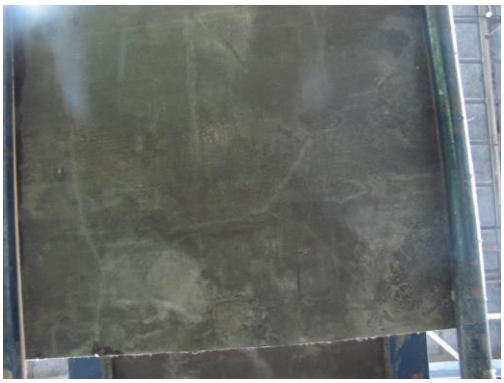

Plate 9: Specimen B – 1 hour into test

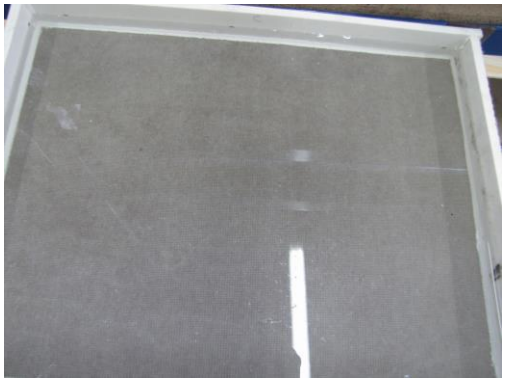

Plate 10: Specimen C – Frame construction

Plate 11: Specimen C – 1 hour into test

Plate 12: Specimen A – At 21 hours

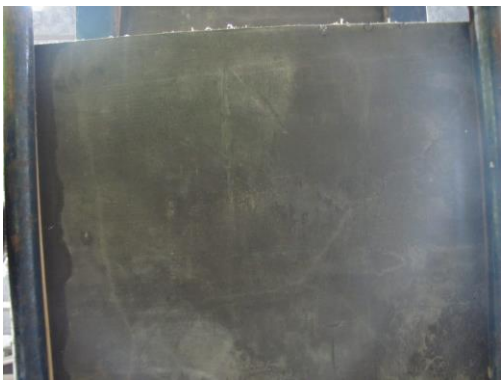

Plate 13: Specimen B – At 21 hours

Plate 14: Specimen C – At 21 hours

Plate 15: Specimen A – At 24 hours

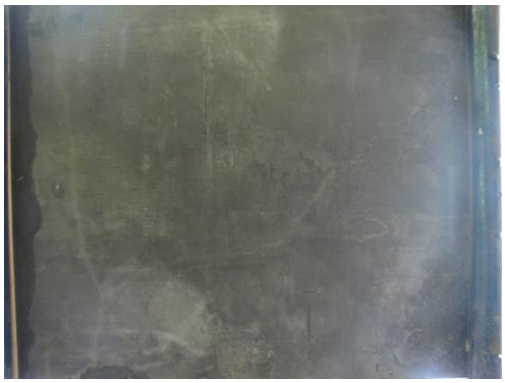

Plate 16: Specimen B – At 24 hours

Plate 17: Specimen C – At 24 hours