

Date of issue: Thursday, 22 September 2022

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Crest Showers Ltd

## BTS2217 CERTIFICATE OF TEST: TR220803-2

### An Assessment of the Resistance of the “aquamox hob” to Compression

#### 1. Objective:

- 1.1 BEAL Testing Services were contracted by Crest Group Ltd to verify that the Crest Shower “aquamox hob” will meet the performance requirements of the New Zealand Building Code.
- 1.2 Testing was carried out to assess the ability of the product to meet the requirement of durability after being waterproofed, tiled and stood on by users.
- 1.3 ASTM D1667-05 is an established method for the measurement of compression resistance of flexible cellular materials, which includes the aquamox tile backer board.

#### 2. Methodology:

- 2.1 This method is based on a test procedure that is commonly used for the measurement of compression resistance.
- 2.2 Test specimens were prepared from material supplied by Crest Group Ltd.
- 2.3 Seven 50mm x 50mm specimens were prepared and each identified with a label S1196-1 to 7.

#### 3. Test Equipment:

- 3.1 Use was made of the Tinius Olsen H5KS Universal Testing Machine together with compression platens – 50mm x 50mm standard jigs. See attached photos.

#### 4. Criteria:

- 4.1 Acceptance of performance shall be based on the results of compression being comparable or better than similar material already in use in the market.
- 4.2 Interpretation shall be undertaken by an expert from BEAL.

## 5. Condition of Samples

5.1 Samples are typically prepared at room conditions.

## 6. Sample Preparation:

6.1 Specimens shall be prepared (usually cut) to an accurate square 50mm x 50mm, ideally the maximum thickness should be approximately 50mm.

## 7. Test Conditions:

7.1 Testing is conducted at room conditions.

## 8. Result:

8.1 For aquamox tile backer board

Compression (mm)	Force after 60s (N)	Pressure (MPa)
3.18	886	0.335
3.18	423	0.160
3.18	845	0.320
3.18	873	0.330
3.18	861	0.326
<b>Average:</b>	<b>778</b>	<b>0.294</b>
<b>SD:</b>	<b>199</b>	<b>0.075</b>

8.2 For the aquamox hob

Compression (mm)	Force after 60s (N)	Pressure (MPa)
12.6	1290	0.518
12.6	1000	0.407
<b>Average:</b>	<b>1150</b>	<b>0.482</b>
<b>SD:</b>		

## 9. Comment:

9.1 The figures above indicate the hob has a much greater compression resistance for the aquamox tile backer board. The result indicates a satisfactory performance.

## 10. Attachments:

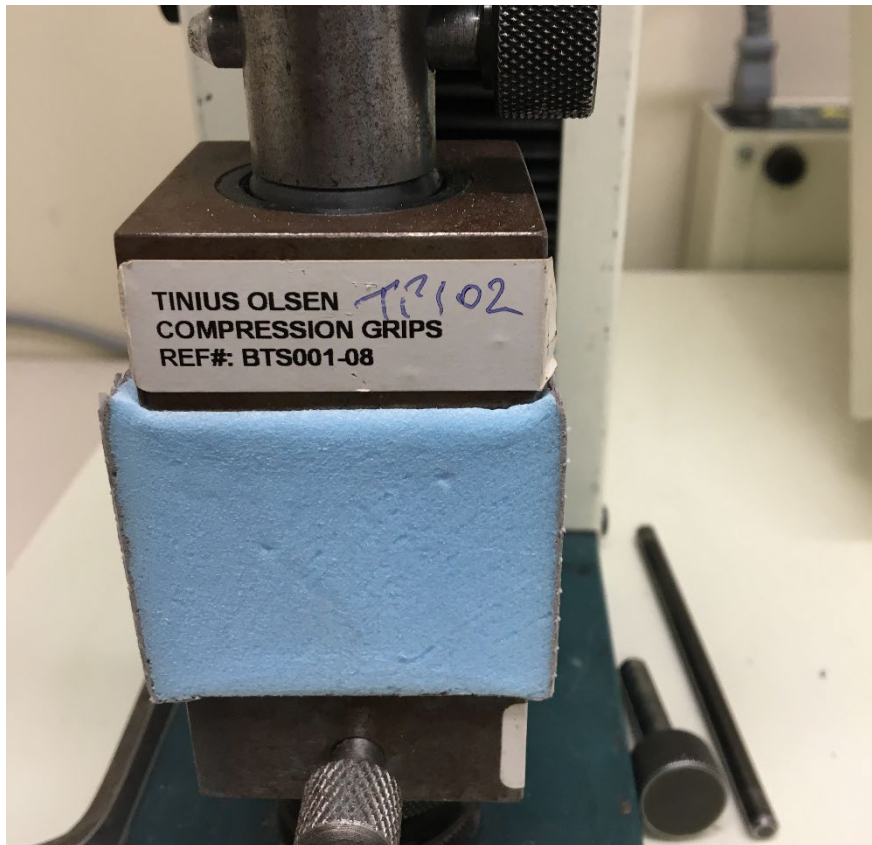
10.1 Relevant Photos.



Colin Prouse – Building Scientist  
Authorised signatory

**Building Element Assessment Laboratory Limited**

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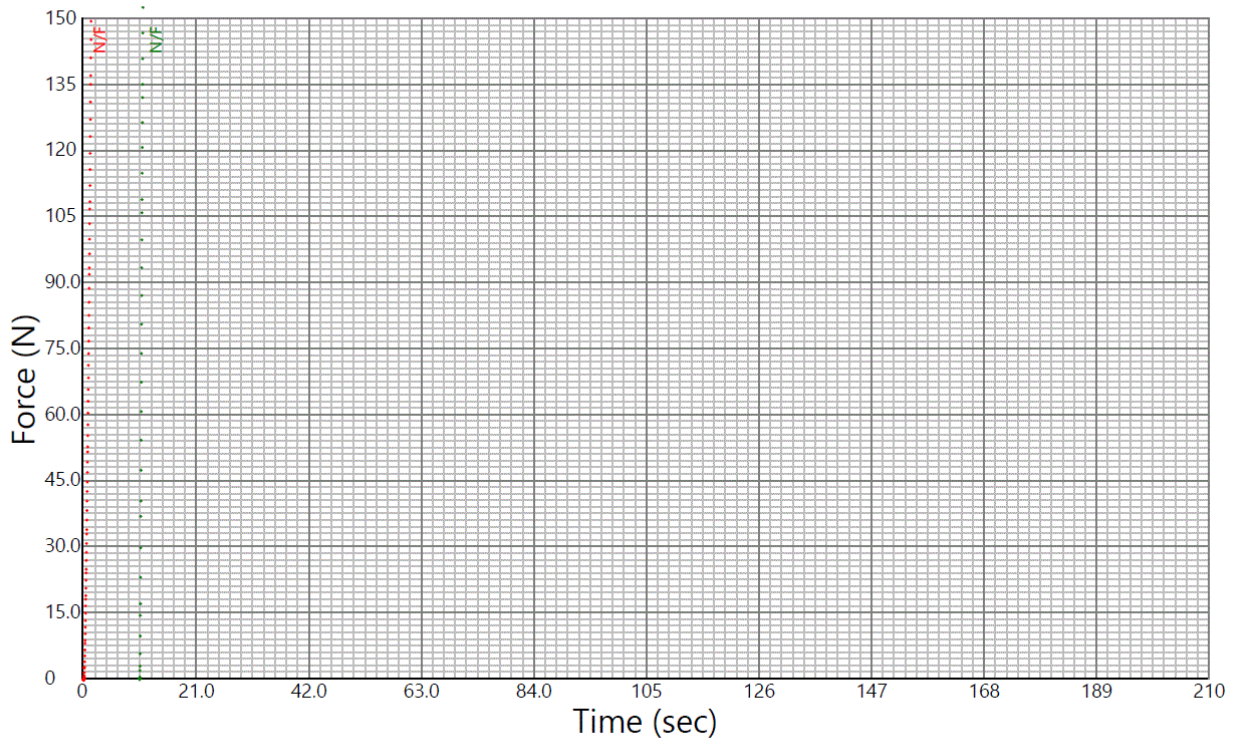
Mechanical Testing  
 Using a Tinius Olsen Universal Testing Machine  
 H5KS Machine Output



Client:	Crest Showers
Job Number:	BTS2217-4
TR #:	210922-1
Product Name:	crest shower hob
Conditioning:	nil
Tested by:	David C

Method Name:	BEAL Compression to 25% of Thickness
Standard:	ASTM D1667
Test Speed:	30.0 mm/min
Calibration:	
Batch Start Date and Time:	22/09/2022 2:59 pm
Graph Offset:	N/F

Specimen #	Area mm <sup>2</sup>	Thickness mm	25% Thickness mm	Force at End N	Stress at End MPa	Max Force N	Ultimate Stress kPa
S1196-1	2480	50.2	12.6	1290	0.518	1740	702
S1196-2	2470	50.1	12.6	1000	0.407	1440	581
Average				1150	0.462	1590	642
SD						218	85.6
CoV						13.7	13.3



Method: BEAL Compression to 25% of Thickness. (rev. 24)  
 v10.2.5.0 - 605745GB - BEAL (Building Element Assessment Laboratory)

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Output: BEAL Compression to 25% of Thickness (rev. 39)  
 H5KS/06 : 5000N. Printed: 23/09/2022 3:12 pm