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# PHYSICAL TESTING ANALYSIS REPORT

Description:	Freeze Thaw			
Test Method:	EN539-2 Method D			
Ceram Reference:	(135579)-23547			
Client:	Aldershaw Handmade Tiles Kent Street Sedlescombe East Sussex TN33 0SD			
For the Attention of:	Anthony Kindell			
Date Logged:	30-Oct-2013			
Date of Tests:	04-Nov-2013 to 25-Nov-2013			
Report Date:	28-Nov-2013			
Purchase Order No.:	N/A			

Please find attached the results for the sample(s) recently submitted for analysis. Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.

Mr Graham Doe Author

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# CLAY ROOFING TILES – TEST FOR FROST RESISTANCE BSEN 539-2: 2006 Method D

### 1 SAMPLES RECEIVED

21 plain tiles with nomnal dimensions of 265 x 165 mm within a test panel consisting of seven rows each containing three test tiles. As sampled by client.

## 2 TEST PROCEDURE

#### 2.1 Saturation of Tiles

The samples were dried at 110°C, weighed and examined for existing defects before being immersed in water at ambient temperature for 24 hours. They were then removed and weighed before returning to the water for a further 6 days. The water absorption results are given in Table 1.

#### 2.2 Freeze/Thaw Tests

The tiles were tested according to the method described in BS EN 539-2, Test Method D using the apparatus illustrated in that standard.

#### 2.3 Results

# Table 1

	% Water Absorption	Frost Damage				
Tile No:		50 Cycles (Front)	50 Cycles (Back)	100 Cycles (Front)	100 Cycles (Back)	
1	8.0	No damage	No damage	No damage	No damage	
2	8.0	No damage	No damage	No damage	No damage	
3	7.8	No damage	No damage	No damage	No damage	
4	7.9	No damage	No damage	No damage	No damage	
5	7.8	No damage	No damage	No damage	No damage	
6	7.7	No damage	No damage	No damage	No damage	
7	7.9	No damage	No damage	No damage	No damage	
8	7.9	No damage	No damage	No damage	No damage	
9	7.7	No damage	No damage	No damage	No damage	
10	7.4	No damage	No damage	No damage	No damage	
11	7.8	No damage	No damage	No damage	No damage	
12	7.5	No damage	No damage	No damage	No damage	
13	7.6	No damage	No damage	No damage	No damage	
14	7.9	No damage	No damage	No damage	No damage	
15	8.3	No damage	No damage	No damage	No damage	
16	7.9	No damage	No damage	No damage	No damage	
17	7.9	No damage	No damage	No damage	No damage	
18	7.7	No damage	No damage	No damage	No damage	
19	7.9	No damage	No damage	No damage	No damage	
20	7.8	No damage	No damage	No damage	No damage	
21	8.3	No damage	No damage	No damage	No damage	
Mean	7.9	No damage	No damage	No damage	No damage	

The tiles were examined after 50 cycles and 100 cycles for signs of damage due to the action of frost.



## **3 SUMMARY AND CONCLUSIONS**

BS EN 539-2, Test Method D requires that when tiles are tested by the method described they shall withstand 100 cycles without damage before they can be regarded as frost resistant.

The samples of tiles have met this criterion at 50 and 100 cycles and can therefore be regarded as frost resistant.

**END OF TEST REPORT**