

PHYSICAL TESTING ANALYSIS REPORT

Ceram Reference: (124419)-18142\CR1

Client: Tudor Roof Tile Company Limited
Denge Marsh Road
Lydd
Kent
TN29 9JH

For the Attention of: Mr Paul Lythgoe

Date Logged: 31-Aug-2012

Date of Tests: 13-Sep-2012 to 25-Oct-2012

Report Date: 29-Oct-2012

Purchase Order No.: PJL60812

Work Location: Ceram UK

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.

This report supersedes the report dated 26/10/2012 Ref (124419)-18142 Clay Roofing Tiles - Test for Frost Resistance.



Mr Simon Hall
Author

Ceram Reference: (124419) – 18142\CR1
Customer Reference: Mixed Colours
Description: Hand Made Roof Tile



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

1 SAMPLES RECEIVED

21 plain tiles with nominal dimensions of 265x165mm 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

Tile No:	% Water Absorption	Frost Damage			
		50 Cycles (Front)	50 Cycles (Back)	100 Cycles (Front)	100 Cycles (Back)
1	5.0	No damage	No damage	No damage	No damage
2	4.9	No damage	No damage	No damage	No damage
3	4.8	No damage	No damage	No damage	No damage
4	5.3	No damage	No damage	No damage	No damage
5	5.0	No damage	No damage	No damage	No damage
6	4.7	No damage	No damage	No damage	No damage
7	4.7	No damage	No damage	No damage	No damage
8	4.6	No damage	No damage	No damage	No damage
9	5.2	No damage	No damage	No damage	No damage
10	5.1	No damage	No damage	No damage	No damage
11	4.8	No damage	No damage	No damage	No damage
12	4.6	No damage	No damage	No damage	No damage
13	5.6	No damage	No damage	No damage	No damage
14	4.1	No damage	No damage	No damage	No damage
15	4.4	No damage	No damage	No damage	No damage
16	4.5	No damage	No damage	No damage	No damage
17	4.5	No damage	No damage	No damage	No damage
18	5.6	No damage	No damage	No damage	No damage
19	4.3	No damage	No damage	No damage	No damage
20	4.8	No damage	No damage	No damage	No damage
21	5.5	No damage	No damage	No damage	No damage
Mean	4.9	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.

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Table 2

Tile No:	% Water Absorption	Frost Damage			
		150 Cycles (Front)	150 Cycles (Back)	200 Cycles (Front)	200 Cycles (Back)
1	5.0	No damage	No damage	No damage	No damage
2	4.9	No damage	No damage	No damage	No damage
3	4.8	No damage	No damage	No damage	No damage
4	5.3	No damage	No damage	No damage	No damage
5	5.0	No damage	No damage	No damage	No damage
6	4.7	No damage	No damage	No damage	No damage
7	4.7	No damage	No damage	No damage	No damage
8	4.6	No damage	No damage	No damage	No damage
9	5.2	No damage	No damage	No damage	No damage
10	5.1	No damage	No damage	No damage	No damage
11	4.8	No damage	No damage	No damage	No damage
12	4.6	No damage	No damage	No damage	No damage
13	5.6	No damage	No damage	No damage	No damage
14	4.1	No damage	No damage	No damage	No damage
15	4.4	No damage	No damage	No damage	No damage
16	4.5	No damage	No damage	No damage	No damage
17	4.5	No damage	No damage	No damage	No damage
18	5.6	No damage	No damage	No damage	No damage
19	4.3	No damage	No damage	No damage	No damage
20	4.8	No damage	No damage	No damage	No damage
21	5.5	No damage	No damage	No damage	No damage
Mean	4.9	No damage	No damage	No damage	No damage

The tiles were examined after 150 cycles and 200 cycles for signs of damage due to the action of frost.

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Table 3

Tile No:	% Water Absorption	Frost Damage			
		250 Cycles (Front)	250 Cycles (Back)	300 Cycles (Front)	300 Cycles (Back)
1	5.0	No damage	No damage	No damage	No damage
2	4.9	No damage	No damage	No damage	No damage
3	4.8	No damage	No damage	No damage	No damage
4	5.3	No damage	No damage	No damage	No damage
5	5.0	No damage	No damage	No damage	No damage
6	4.7	No damage	No damage	No damage	No damage
7	4.7	No damage	No damage	No damage	No damage
8	4.6	No damage	No damage	No damage	No damage
9	5.2	No damage	No damage	No damage	No damage
10	5.1	No damage	No damage	No damage	No damage
11	4.8	No damage	No damage	No damage	No damage
12	4.6	No damage	No damage	No damage	No damage
13	5.6	No damage	No damage	No damage	No damage
14	4.1	No damage	No damage	No damage	No damage
15	4.4	No damage	No damage	No damage	No damage
16	4.5	No damage	No damage	No damage	No damage
17	4.5	No damage	No damage	No damage	No damage
18	5.6	No damage	No damage	No damage	No damage
19	4.3	No damage	No damage	No damage	No damage
20	4.8	No damage	No damage	No damage	No damage
21	5.5	No damage	No damage	No damage	No damage
Mean	4.9	No damage	No damage	No damage	No damage

The tiles were examined after 250 cycles and 300 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 300 cycles and can therefore be regarded as frost resistant.

END OF TEST REPORT