



Geoceramic Researches S.r.l.

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Laboratory for Experimental and Technological Ceramics and Brick Industries

TEST REPORT

N° 188/19 eng

Place and Date of Issue : Monte San Pietro, October 7, 2019

Customer : KEBE S.A.

Address : Nea Santa
61100 KILKIS GREECE

DESCRIPTION SAMPLES: **ROOF TILES**
TYPE: **MACEDONIAN**

Standards applied : UNI EN 539-2 : 2013

Sampling date : June 17, 2019

Sampling by : Client Geoceramic R.

Preservation time of the whole sample in excess: 3 months from the end date of the tests.
Documents and Recordings regarding this sample will be kept for a minimum of 4 years.

This document may not be reproduced in part, without the approval of the Laboratory.

The data reported in the test report refer only to the sample tested as received in the Laboratory.

The validity of digital signature is verifiable through the analysis of the field file original signature.

Laboratory with Quality Management System ISO 9001: 2015



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UNI EN 539-2 : 2013

CLAY ROOFING TILES FOR DISCONTINUOUS LAYING.
DETERMINATION OF PHYSICAL CHARACTERISTICS.
PART 2 - TEST FOR FROST RESISTANCE

Sample arrived June 17, 2019 (sampling executed by Costumer)

**DESCRIPTION SAMPLES: ROOF TILES
TYPE: MACEDONIAN**

Test start: 23/08/2019

Test finished: 04/10/2019

Pre-saturation of test pieces Water absorption after 7 days under water	
Roof tile n°	
1	7,1%
2	7,3%
3	7,1%
4	7,2%
5	7,3%
6	7,3%
Average water absorption	7,2%


Laboratory Head
P.I. Riccardo Frabetti



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EVALUATION OF TEST PIECES

RESULT:

LEVEL 1

The samples, after 150 freeze / thaw cycles, did not report any damage according to the attached table.

Interpretation of the results

		Front	Back
1	pit	--	--
2	hair crack	--	--
3	nascent crack	--	--
4	surface crack	--	--
5	surface damage (scaling, chip, peeling flaking)	--	--
6	structural crack	--	--
7	loss of interlocking ribs	--	--
8	break	--	--
9	delamination	--	--
10	loss of all nibs	--	--

Legend:

X = unacceptable

-- = acceptable

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