



**Geoceramic Researches S.r.l.**

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Laboratory for Experimental and Technological Ceramics and Brick Industries

**TEST REPORT**

**N° 162/19 eng**

Place and Date of Issue : Monte San Pietro, September 16, 2019

Customer : KEBE S.A.

Address : Nea Santa  
61100 KILKIS GREECE

DESCRIPTION SAMPLES: **ROOF TILES**  
TYPE: **DUTCH**

Standards applied : UNI EN 539-2 : 2013

Sampling date : 17/06/2019

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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Test Report

TR n. 162/19 eng

Date September 16, 2019

KEBE S.A.  
Nea Santa  
61100 KILKIS GREECE

**UNI EN 539-2 : 2013**

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

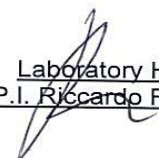
Sample arrived 17/06/2019 (sampling executed by Costumer)

**DESCRIPTION SAMPLES: ROOF TILES  
TYPE: DUTCH**

Test start: 23/08/2019

Test finished: 13/09/2019

Pre-saturation of test pieces Water absorption after 7 days under water	
Roof tile n°	
1	4,0%
2	3,4%
3	3,8%
4	4,2%
5	4,1%
6	3,5%
<b>Average water absorption</b>	<b>3,9%</b>

  
Laboratory Head  
P.I. Riccardo Frabetti

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 PART 2 - TEST FOR FROST RESISTANCE

**Sample arrived 17/06/2019 (sampling executed by Costumer)**

**DESCRIPTION SAMPLES: ROOF TILES  
 TYPE: DUTCH**

Test start: 16/07/2019

Test finished: 23/08/2019

**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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