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Laboratorio Tecnologico e Sperimentale per le Industrie Ceramiche e dei Laterizi



LAB N° 1505

TEST REPORT

TS N°: 304/16eng

DATE 25/11/2016

Spett.le
GRUPPO ROMANI S.P.A.
Via A. Volta, 9-23/25
42013 CASALGRANDE RE

UNI EN ISO 10545-4 : 2014

CERAMIC TILES DETERMINATION OF MODULUS OF RUPTURE AND BREAKING STRENGTH

The present norm establishes a test method in order to determine the modulus of rupture (R) and the breaking strength (S) of all the floor tiles of ceramics for means of a cargo applied on three points, with the point centers them of cargo in contact with the surface of exercise of the floor tile.

The modulus of rupture, expressed in Newton to the square millimetre, is given gives:
The breaking strength, expressed in Newton, is given gives:

$$R = 3 \cdot F \cdot L / 2 \cdot b \cdot h^2$$
$$S = F \cdot L / b$$

where: F is the necessary cargo to the breach (in Newton); L is the distance between the seams of support (in millimeters); b it is the width of the floor tile (in millimetres); h it is the minimal thickness of the champion of test (in millimeters) measured after the long test the edge of the breach.

Samples arrived 14/11/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 20x20 cm
TYPE : CIR MAT C NAT 10 mm

Test start 16/11/2016
Test finished 16/11/2016

Description equipment

- Crometro - Cod. GR AS/004
- vernier caliper up to 500 mm - Cod. GR AC/012
- feeler 0÷20 mm - Cod. AC/011
- diameter of the seam (d) : mm 20
- thickness of the rubber (t): 5
- distance between support and extremity camp. (l): 10

Laboratory Head
P.I. Riccardo Frabetti



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DETERMINATION OF MODULUS OF RUPTURE AND BREAKING STRENGTH

Samples arrived 14/11/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 20x20 cm
TYPE : CIR MAT C NAT 10 mm

Test start 16/11/2016
Test finished 16/11/2016

- number of tile for the test..... 7
- distance between support and extremity sample (l): mm..... 10
- distance between the seams of support (l₂) mm..... 180

	mm	mm	mm	N	N	N/mm ²
Tile n°	l ₂	b	h	F	S	R
1	180	198,8	7,9	2845	2576	61,9
2	180	198,8	7,9	2761	2500	60,1
3	180	198,6	7,7	2685	2434	61,6
4	180	198,8	7,7	2696	2441	61,8
5	180	198,8	7,7	2768	2506	63,4
6	180	198,9	7,9	2765	2502	60,1
7	180	198,8	8,0	2856	2586	60,6
media	180	198,8	7,8	2768	2506	61,4

Average breaking load F.....2768.....N

Breaking strength S.....2506.....N

Average modulus of rupture R.....61,4.....N/mm²

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