

### The international reference standards: ISO - EN

The values of the main technical characteristics measured on our products, compared with international standards, are clearly shown and reproduced on our contractual documents (catalogs, price lists, etc.).

The values given in this document are common to groups of articles or series of our tiles and therefore are to be used as a guide for a first orientation in choosing the product. If required, the specific values for a given product on a determined supply can be provided depending on its intended use, when formally brought to our attention by notice in writing.

Characteristics and Test methods	Requirements EN 14411 <sup>(1)</sup> – G / ISO 13006 <sup>(2)</sup> - G	Our general values
Determination of water absorption - (ISO 10545-3)	Average value $E_b \leq 0,5\%$ / Individual maximum $\leq 0,6\%$	< 0,03% Average value and individual maximum
<b>Classification</b>	<b>Definition § 3.2 and § 3.7</b>	<b>BI<sub>a</sub> – Porcelain tiles</b>
<b>20 mm</b>		<b>Physical properties</b>
Modulus of rupture - (ISO 10545-4)	Average $\geq 35$ N/mm <sup>2</sup>	$\geq 35$ N/mm <sup>2</sup>
Breaking strength - (ISO 10545-4)	Average $\geq 1300$ N for thickness $\geq 7,5$ mm Average $\geq 700$ N for thickness $< 7,5$ mm	Complies
Flexion resistance and breaking load - (EN 1339-F) <b>P- Averag Breaking Strength</b> T - Average of moduls of rupture	Classes according to EN 1339 - § 5	$\geq$ U11 (3) (for square slabs) $\geq 12,000$ N (3) (for square slabs) $\geq 50$ MPa (3) (for square slabs)
Compressive strength (cubic sample 2 cm side)	NA	$\geq 200$ MPa (2.000 kg/cm <sup>2</sup> / 29.000 psi)
<b>Mohs haedness scale</b> (ex EN 101 / BS 6431-13)	NA	$\geq 8$
Resistance to surface abrasion - (ISO 10545-7)	Abrasion class and cycles passed	<b>Class 0 – 5</b>
Resistance to deep abrasion - (ISO 10545 - 6)	Max volume abraded $< 175$ / mm <sup>3</sup>	<b>&lt; 130 / mm<sup>3</sup></b>
<b>Raccomanded use</b>	Novabell criterion	<b>Class 5</b> (see Annex N - ISO 13006 / EN 14411)
<b>Color resistance to UV light</b> (DIN 51094)	---	<b>Resistant</b>
<b>Coefficient of linear thermal expansion</b> (ISO 10545-8)	Declared value <sup>(1)</sup> / Test method available <sup>(2)</sup>	<b><math>&lt; 7,1 \times 10^{-6} \text{ }^\circ\text{C}^{-1}</math></b>
Thermal shock resistance (ISO 10545-9)	Pass according to EN ISO 10545-1 <sup>(1)</sup> / Test method available <sup>(2)</sup>	Complies
Crazing resistance (ISO 10545-11)	Pass according to EN ISO 10545-1 <sup>(1)</sup> / Required <sup>(2)</sup>	Complies
Frost resistance (ISO 10545-12)	Pass according to EN ISO 10545-1 <sup>(1)</sup> / Required <sup>(2)</sup>	Complies
Moisture expansion (ISO 10545-10)	Declared value <sup>(1)</sup> / Test method available <sup>(2)</sup>	$\leq 0,1$ mm/m
Small colour differences (ISO 10545-16)	$\Delta E_{cmc} da < 0,75$ a $< 1,0$ (1)	If agreed
Impact resistance - (ISO 10545-5)	Declared value <sup>(1)</sup> / Test method available <sup>(2)</sup>	COR $> 0,75$
Reaction to fire	Class A1 or A1 <sub>FL</sub> <sup>(1)</sup>	A1 <sub>FL</sub> Classified Without Testing (CWT) – 96/603 EC
<b>20 mm</b>		<b>Chemical properties</b>
Chemical resistance (ISO 10545-13)		
Resistance to low and high concentrations of acids and alkalis	Declared value <sup>(1)</sup> / Manufacturer is to state classification <sup>(2)</sup>	Resistant (see "Maintenance and care" section)
Resistance to household chemicals and swimming pool salts	Minimum class B	<b>A</b>
Resistance to staining (ISO 10545-14)	Minimum class 3	<b>5</b> (see "Maintenance and care" section)
Release of dangerous substances (ISO 10545-15)	Declared value <sup>(1)</sup> / Test method available <sup>(2)</sup>	Pb $< 0,1$ / Cd $< 0,01$ mg/dm <sup>2</sup>
<b>20 mm</b>		<b>Dimensions and surface quality</b>
Dimensions - (ISO 10545-2)	See ANNEX G	Complies
Surface quality - (ISO 10545-2 § 7)	<b>A minimum of 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of tiles</b>	Complies

(1) Requirements according to EN 14411 (2) Requirements according to ISO 13006 (3) This classification is not an indication of the intended use of NF 187 for concrete slabs

Test methods	Requirements and references	Our general values
<b>DIN 51130</b>	BGR / ASR From R9 to R13	<b>R 11</b>
<b>DIN 5109</b>	GUV-I 8527 A – B – C	<b>A + B + C</b>
<b>BCR - ex BCRA</b>	DM n. 236 / 1989 $\mu > 0,40$	$\mu > 0,40$
<b>DCOF Resistance (ANSI A 137.1 Section 9.6)</b>	$\geq 0,42$ <sup>(1)</sup>	<b>DCOF <math>\geq 0,42</math></b>
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