


The international reference standards: ISO - EN

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Characteristics and Test methods 	Requirements EN 14411 ⁽¹⁾ - L / ISO 13006 ⁽²⁾ - L	Our general values
Determination of water absorption - (ISO 10545-3)	Average value $E_p > 10\%$ / Individual minimum 9 % When the average exceeds 20 %, this shall be indicated	Average value and individual $> 10\%$ and less than 20 %
Classification	Classification – Table 1	Group BIII
		Physical properties
Modulus of rupture - (ISO 10545-4)	Average ≥ 15 N/mm ² for thickness $\geq 7,5$ mm Average ≥ 12 N/mm ² for thickness $< 7,5$ mm	≥ 20 N/mm ²
Breaking strength - (ISO 10545-4)	Average ≥ 600 N for thickness $\geq 7,5$ mm Average ≥ 200 N for thickness $< 7,5$ mm	Complies
Coefficient of linear thermal expansion (ISO 10545-8)	Declared value ⁽¹⁾ / Test method available ⁽²⁾	$< 9 * 10^{-6} \text{ } ^\circ\text{C}^{-1}$
Thermal shock resistance (ISO 10545-9)	Pass according to EN ISO 10545-1 ⁽¹⁾ / Test method available ⁽²⁾	Resistant
Crazing resistance (ISO 10545-11)	Pass according to EN ISO 10545-1 ⁽¹⁾ / Required ⁽²⁾	Resistant
Moisture expansion (ISO 10545-10)	Declared value ⁽¹⁾ / Test method available ⁽²⁾	$\leq 0,2$ mm/m
Small colour differences (ISO 10545-16)	$\Delta E_{cmc} < 0,75^{(1)}$	If agreed
Reaction to fire	Class A1 or A1 _{FL} ⁽¹⁾	A1 (CWT)
		Chemical properties
Chemical resistance -(GL) (ISO 10545-13)		
Resistance to low and high concentrations of acids and alkalis	Declared value ⁽¹⁾ / manufacturer is to state classification ⁽²⁾	Resistant
Resistance to household chemicals and swimming pool salts	Minimum class B	Complies
Resistance to staining (ISO 10545-14)	Minimum class 3	Complies
Release of dangerous substances (ISO 10545-15)	Declared value ⁽¹⁾ / Test method available ⁽²⁾	Pb $< 0,1$ / Cd $< 0,01$ mg/dm ²
		Dimensions and surface quality
Length and width - (ISO 10545-2 § 2)	Max deviat. % from $W \leq \pm 0,6$ ($\pm 2,0$ mm) for $N \geq 15$ cm Max deviat. % from $W \leq \pm 0,75$ mm for $N < 15$ cm	Complies
Thickness - (ISO 10545-2 § 3)	Max deviat. % from $W \leq \pm 10$ ($\pm 0,5$ mm) for $N \geq 15$ cm Max deviat. % from $W \leq \pm 0,5$ mm for $N < 15$ cm	Complies
Straightness of sides - (ISO 10545-2 § 4)	Max deviat. % $\leq \pm 0,3$ ($\pm 1,5$ mm) for $N \geq 15$ cm Max deviat. $\leq \pm 0,5$ mm for $N < 15$ cm	Complies
Rectangularity - (ISO 10545-2 § 5)	Max deviat. % $\leq \pm 0,5$ ($\pm 2,0$ mm) for $N \geq 15$ cm Max deviat. $\leq \pm 0,75$ mm for $N < 15$ cm	Complies
Centre curvature - (ISO 10545-2 § 6)	Max deviat. % $\leq + 0,5 / - 0,3$ ($+ 2,0/-1,5$ mm) for $N \geq 15$ cm Max deviat. from $W \leq + 0,75/-0,50$ mm for $N < 15$ cm	Complies
Edge curvature - (ISO 10545-2 § 6)	Max deviat. % $\leq + 0,5 / - 0,3$ ($+ 2,0/-1,5$ mm) for $N \geq 15$ cm Max deviat. from $W \leq + 0,75/-0,50$ mm for $N < 15$ cm	Complies
Warpage - (ISO 10545-2 § 6)	Max deviat. % $\leq \pm 0,5$ ($\pm 2,0$ mm) for $N \geq 15$ cm Max deviat. from $W \leq \pm 0,75$ mm for $N < 15$ cm	Complies
Surface quality - (ISO 10545-2 § 7)	A minimum of 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of tiles	Complies

(1) Requirements according to Fpr EN 14411:2015


(2) Requirements according to ISO 13006:2012



North America reference standards : ANSI – ASTM

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Characteristics and Test methods 	Requirements ANSI A 137.1	Our general values
Determination of water absorption - (ASTM C 373)	Average value $7\% < E_b \leq 20\%$	Average value and individual $> 10\%$ and less than 20%
Classification	Definition § 3.0	Non vitreous tile P4
		Physical properties
Breaking strength - (ASTM C 648)	Average ≥ 125 lbf (0.55 kN) Individual ≥ 100 lbf (0.44 kN)	Complies
Thermal shock resistance (ASTM C 428)	Pass	Resistant
Crazing resistance (ASTM C 424)	Pass	Resistant
Bond strength (ASTM C 482)	≥ 50 psi (0.34 MPa)	> 1 MPa
		Chemical properties
Chemical resistance (ASTM C 650)	As reported	Pass
Stain resistance (ASTM C 1378)	As reported	Pass
		Dimensions - Calibrated tiles
Nominal size - (ASTM C 499)	Minimum: $- 2.00\%$ Maximum: $+ 2.00\%$	Complies
Caliber range (variation from average facial dimension of sample, tested per ASTM C 499)	Minimum: $- 0.30\%$ or $- 0.04$ in ($- 1.0$ mm) Maximum: $+ 0.30\%$ or $+ 0.04$ in ($+ 1.0$ mm)	Complies
Thickness - (ASTM C 499)	Range 0.031 (0.79 mm)	Complies
Warpage edge (ASTM C 485)	Minimum: $- 0.30\%$ or $- 0.04$ in ($- 1.0$ mm) Maximum: $+ 0.40\%$ or $+ 0.05$ in ($+ 1.3$ mm)	Complies
Warpage diagonal (ASTM C 485)	Minimum: $- 0.30\%$ or $- 0.05$ in ($- 1.3$ mm) Maximum: $+ 0.40\%$ or $+ 0.07$ in ($+ 1.8$ mm)	Complies
Wedging (ASTM C 502)	Minimum: $- 0.40\%$ or $- 0.05$ in ($- 1.3$ mm) Maximum: $+ 0.40\%$ or $+ 0.05$ in ($+ 1.3$ mm)	Complies
		Dimensions - Rectified tiles
Nominal size - (ASTM C 499)	Minimum: $- 2.00\%$ Maximum: $+ 2.00\%$	Complies
Caliber range (variation from average facial dimension of sample, tested per ASTM C 499)	Minimum: $- 0.25\%$ or $- 0.03$ in ($- 0.8$ mm) Maximum: $+ 0.25\%$ or $+ 0.03$ in ($+ 0.8$ mm)	Complies
Thickness - (ASTM C 499)	Range 0.031 in (0.79 mm)	Complies
Stain resistance (ASTM C 1378)	As reported	Pass

(1) For V0 tiles only