


Technical Properties

VilboStone glazed and unglazed porcelain stoneware

Technical Properties of Ceramic Tiles and Slabs with Low Water Absorption
in acc. with DIN EN 14411:2012 tab. G.1 Group BI_a (Water Absorption E_b ≤ 0.5%)

Classification:  Table ZA.1.1 Floors inside and / or outside Table ZA.1.2 Walls inside	Requirements for nominal size N				Test method
	N < 7 cm	7 cm ≤ N < 15 cm	N ≥ 15 cm		
	mm	mm	%	mm	
Length and width The permissible deviation of the average size for each tile (2 or 4 sides) from the work size (W)	± 0.5 mm	± 0.9 mm	± 0.6 %	± 2.0 mm	10545-2 10545-2
Thickness The permissible deviation, of the average thickness of each tile from the work sizethickness	± 0.5 mm	± 0.5 mm	± 5 %	± 0.5 mm	10545-2
Straightness of sides: (facial sides) The maximum permissible deviation from straightness, related to the corresponding work sizes	without testing	± 0.75 mm	± 0.5 %	± 1.5 mm	10545-2
Rectangularity the maximum permissible deviation from rectangularity related to the corresponding work sizes	without testing	± 0.75 mm	± 0.5 %	± 2.0 mm	10545-2
Surface flatness: the maximum permissible deviation from flatness a) Centre curvature, related to the diagonal calculated from the work sizes b) Edge curvature, related to the corresponding work sizes c) Warpage, related to diagonal calculated from the work sizes	without testing without testing without testing	± 0.75 mm ± 0.75 mm ± 0.75 mm	± 0.5 % ± 0.5 % ± 0.5 %	± 2.0 mm ± 2.0 mm ± 2.0 mm	10545-2 10545-2 10545-2
Surface quality	A minimum of 95 % of the tiles shall be free from visible defects that would impair the appearance of a major area of tiles				10545-2
Water absorption: (in % by mass)	E _b ≤ 0,5 % individual maximum 0,6 %				10545-3
Breaking strength, for	thickness ≥ 7.5 mm not less than 1300 N thickness < 7.5 mm not less than 700 N				10545-4
Flexural tensile strength or modulus of rupture	minimum 35 N/mm ² individual minimum 32 N/mm ²				10545-4
Resistance to deep abrasion a) resistance to deep abrasion of unglazed tiles: removed volume b) resistance to surface abrasion of glazed tiles intended for use on floors	maximum 175 mm ³ abrasion class und cycles passed				10545-6 10545-7
Coefficient of linear thermal expansion: from ambient temperature to 100°C (in K ⁻¹)	without testing	declared value			10545-8
Thermal shock resistance	Pass according to EN ISO 10545-1				10545-9
Frost resistance	Pass according to EN ISO 10545-1				10545-12
Moisture expansion (in mm / m)	without testing	declared value			10545-10
Small colour differences a) glazed tiles b) unglazed tiles	a) ΔE _{cmc} < 0,75 b) ΔE _{cmc} < 1,0				10545-16
Impact resistance, as - Coefficient of restitution (COR)	declared value				10545-5
Resistance to staining, for a) glazed tiles b) unglazed tiles	a) minimum class 3 b) declared value				10545-14
Resistance to chemicals a) Resistance to low concentrations of acids and alkalis b) Resistance to high concentrations of acids and alkalis c) Resistance to household chemicals and swimming pool salts	a) declared value b) declared value c) minimum class B				10545-13
Release of dangerous substances a) Cadmium in mg/dm ² b) Lead in mg/dm ² c) other dangerous substances	declared value				10545-15
Slipperiness	declared value(s)				DIN EN 16165