


Technical Properties

Nonvitreous

In acc. with DIN EN 14411, Group BIII (Water Absorption E > 10%)

Areas of application: Table ZA.3 Walls inside 	Tiles and slabs without spacers		Tested in acc. with DIN EN ISO
Length and width:			
e) Deviation in % of the average size of each tile (2 or 4 sides) from the work size	l ≤ 12 cm: ± 0,75%	l > 12 cm: ± 0,5%	10545-2
f) Deviation in % of the average size of each (2 or 4 sides) tile from the average size of 10 test specimens	l ≤ 12 cm: ± 0,50%	l > 12 cm: ± 0,3%	10545-2
Thickness:			
Deviation in % of the average thickness of each tile from the work size	± 10		10545-2
Straightness of sides:			
Max. deviation in % in relation to the corresponding work size	± 0,3		10545-2
Rectangularity:			
Max. deviation in % in relation to the corresponding work size	± 0,5		10545-2
Surface flatness:			
Max. deviation in %			
a) Central dome, in relation to the diagonal calculated from the work size	+0,5 / -0,3%		10545-2
b) Edge dome, in relation to the work size	+0,5 / -0,3 %		10545-2
c) Skew, in relation to the diagonal calculated from the work size	± 0,5%		10545-2
Surface quality:			
≥ 95% of tiles shall be free from visible defects that would impair the appearance of a major area of tiles	Achieved		10545-2
Water absorption in %			
Average 10%. If the value exceeds 20%, this must be declared by the manufacturer. Individual min. 9%	Achieved		10545-3
Breaking strength in N: min. 600N with thickness ≥ 7.5mm / min. 200N with thickness < 7.5mm	Achieved		10545-4
Flexural strength in N/mm² (not applicable on tiles and slabs with a breaking strength ≥ 3000N)			
Min. 12 with thicknesses ≥ 7.5mm / min 15 with thicknesses < 7.5mm	Achieved		10545-4
Coefficient of linear thermal expansion at ambient temperature of up to 100o C in K⁻¹	Testing method available		10545-8
Thermal shock resistance	Testing method available		10545-9
Crazing resistance required	Achieved		10545-11
Moisture expansion	Testing method available		10545-10
Minor colour deviations	Testing method available		10545-16
Impact resistance (measurement of coefficient of restitution)	Testing method available		10545-5
Resistance to staining of glazed tiles (class 1 to 5) – min. class 3	Achieved		10545-14
Resistance to acids and alkalis – low concentration	Testing method available		10545-13
Resistance to acids and alkalis – high concentration	Testing method available		10545-13
Resistance to household chemicals and bath water additives (for swimming pools)			
Class GA to GC – min. GB	Achieved		10545-13
Lead and cadmium release	Testing method available		10545-15

Technical Properties

Glazed vitreous

In acc. with DIN EN 14411, Group Bb (Water Absorption $0.5 < E \leq 3\%$)

Areas of application: Table ZA.1 Floors inside Table ZA.2 Floors outside Table ZA.3 Walls inside	Surface S of the product (cm ²)				Tested in acc. with DIN EN ISO
	S < 90	90 < S < 190	190 < S < 410	S > 410	
Length and width:					
e) Deviation in % of the average size of each tile (2 or 4 sides) from the work size	+/- 1,2	+/- 1,0	+/- 0,75	+/- 0,6	10545-2
f) Deviation in % of the average size of each (2 or 4 sides) tile from the average size of 10 test specimens	+/- 0,75	+/- 0,5	+/- 0,5	+/- 0,5	10545-2
Thickness:					
Deviation in % of the average thickness of each tile from the work size	+/- 10	+/- 10	+/- 5	+/- 5	10545-2
Straightness of sides:					
Max. deviation in % in relation to the corresponding work size	+/- 0,75	+/- 0,5	+/- 0,5	+/- 0,5	10545-2
Rectangularity:					
Max. deviation in % in relation to the corresponding work size	+/- 1,0	+/- 0,6	+/- 0,6	+/- 0,6	10545-2
Surface flatness:					
Max. deviation in %					
a) Central dome, in relation to the diagonal calculated from the work size	+/- 1,0	+/- 0,5	+/- 0,5	+/- 0,5	10545-2
b) Edge dome, in relation to the work size	+/- 1,0	+/- 0,5	+/- 0,5	+/- 0,5	10545-2
c) Skew, in relation to the diagonal calculated from the work size	+/- 1,0	+/- 0,5	+/- 0,5	+/- 0,5	10545-2
Surface quality:					
≥ 95% of tiles shall be free from visible defects that would impair the appearance of a major area of tiles	Achieved	Achieved	Achieved	Achieved	10545-2
Water absorption in % - $0.5\% < E \leq 3\%$, individual max. 3.3%	Achieved	Achieved	Achieved	Achieved	10545-3
Breaking strength in N: min. 1100N (thickness ≥ 7.5mm) / min. 700N (thickness < 7.5mm)	Achieved	Achieved	Achieved	Achieved	10545-4
Flexural strength in N/mm² - min. 30, individual min. 27	Achieved	Achieved	Achieved	Achieved	10545-4
Resistance to deep abrasion					
b) Surface wear of glazed tiles and slabs (class 1 to 5)	The abrasion class is indicated by the manufacturer				10545-7
Coefficient of linear thermal expansion at ambient temperature of up to 100° C in K⁻¹	Testing method available				10545-8
Thermal shock resistance	Testing method available				10545-9
Frost resistance	Achieved	Achieved	Achieved	Achieved	10545-12
Moisture expansion	Testing method available				10545-10
Minor colour deviations	Testing method available				10545-16
Impact resistance (measurement of coefficient of restitution)	Testing method available				10545-5
Resistance to staining of glazed tiles (class 1 to 5)					
a) Glazed tiles and slabs min. class 3	Testing method available				10545-14
b) unglazed tiles and slabs ---	Testing method available				10545-14
Resistance to acids and alkalis – low concentration					
a) Glazed tiles and slabs; class GLA to GLC	According to the class indicated by the manufacturer				10545-13
b) unglazed tiles and slabs; class ULA to ULC	According to the class indicated by the manufacturer				10545-13
Resistance to acids and alkalis – high concentration					
a) Glazed tiles and slabs; class GHA to GHC	Testing method available				10545-13
b) unglazed tiles and slabs; class UHA to UHC	Testing method available				10545-13
Resistance to household chemicals and bath water additives (for swimming pools)					
a) Glazed tiles and slabs; class GA to GC – min. GB	Achieved	Achieved	Achieved	Achieved	10545-13
b) unglazed tiles and slabs; class UA to UC – min. UB	Achieved	Achieved	Achieved	Achieved	10545-13
Lead and cadmium release	Testing method available				10545-15
Slip resistance – commercial area	The application group is specified by the manufacturer				DIN 51130
Slip resistance – barefoot area	The application group is specified by the manufacturer				DIN 51097

Technical Properties

vilbostone glazed and unglazed porcelain stoneware

In acc. with DIN EN 14411, Group BIa (Water Absorption E ≤ 0.5%)					
Areas of application: Table ZA.1 Floors inside Table ZA.2 Floors outside Table ZA.3 Walls inside	Surface S of the product (cm ²)				Tested in acc. with DIN EN ISO
	S < 90	90 < S < 190	190 < S < 410	S > 410	
Length and width:					
e) Deviation in % of the average size of each tile (2 or 4 sides) from the work size	+/- 1,2	+/- 1,0	+/- 0,75	+/- 0,6	10545-2
f) Deviation in % of the average size of each (2 or 4 sides) tile from the average size of 10 test specimens	+/- 0,75	+/- 0,5	+/- 0,5	+/- 0,5	10545-2
Thickness:					
Deviation in % of the average thickness of each tile from the work size	+/- 10	+/- 10	+/- 5	+/- 5	10545-2
Straightness of sides:					
Max. deviation in % in relation to the corresponding work size	+/- 0,75	+/- 0,5	+/- 0,5	+/- 0,5	10545-2
Rectangularity:					
Max. deviation in % in relation to the corresponding work size	+/- 1,0	+/- 0,6	+/- 0,6	+/- 0,6	10545-2
Surface flatness:					
Max. deviation in %					
a) Central dome, in relation to the diagonal calculated from the work size	+/- 1,0	+/- 0,5	+/- 0,5	+/- 0,5	10545-2
b) Edge dome, in relation to the work size	+/- 1,0	+/- 0,5	+/- 0,5	+/- 0,5	10545-2
c) Skew, in relation to the diagonal calculated from the work size	+/- 1,0	+/- 0,5	+/- 0,5	+/- 0,5	10545-2
Surface quality:					
≥ 95% of tiles shall be free from visible defects that would impair the appearance of a major area of tiles	Achieved	Achieved	Achieved	Achieved	10545-2
Water absorption in % - ≤ 0.5%, individual max. 0.6%	Achieved	Achieved	Achieved	Achieved	10545-3
Breaking strength in N: min.1300N (thickness ≥ 7.5mm) / min. 700N (thickness < 7.5mm)	Achieved	Achieved	Achieved	Achieved	10545-4
Flexural strength in N/mm² - min. 35, individual min. 32	Achieved	Achieved	Achieved	Achieved	10545-4
Resistance to deep abrasion					
a) Deep abrasion of unglazed tiles and slabs- volume loss max. 175 mm ³	Achieved				10545-6
b) Surface wear of glazed tiles and slabs -	The abrasion class is indicated by the manufacturer				10545-7
Coefficient of linear thermal expansion at ambient temperature of up to 100° C in K⁻¹	Testing method available				10545-8
Thermal shock resistance	Testing method available				10545-9
Frost resistance	Achieved	Achieved	Achieved	Achieved	10545-12
Moisture expansion	Testing method available				10545-10
Minor colour deviations	Testing method available				10545-16
Impact resistance (measurement of coefficient of restitution)	Testing method available				10545-5
Resistance to staining of glazed tiles (class 1 to 5)					
a) Glazed tiles and slabs min. class 3	Testing method available				10545-14
b) unglazed tiles and slabs ---	Testing method available				10545-14
Resistance to acids and alkalis – low concentration					
a) Glazed tiles and slabs; class GLA to GLC	According to the class indicated by the manufacturer				10545-13
b) unglazed tiles and slabs; class ULA to ULC	According to the class indicated by the manufacturer				10545-13
Resistance to acids and alkalis – high concentration					
a) Glazed tiles and slabs; class GHA to GHC	Testing method available				10545-13
b) unglazed tiles and slabs; class UHA to UHC	Testing method available				10545-13
Resistance to household chemicals and bath water additives (for swimming pools)					
a) Glazed tiles and slabs; class GA to GC – min. GB	Achieved	Achieved	Achieved	Achieved	10545-13
b) unglazed tiles and slabs; class UA to UC – min. UB	Achieved	Achieved	Achieved	Achieved	10545-13
Lead and cadmium release	Testing method available				10545-15
Slip resistance – commercial area	The application group is specified by the manufacturer				DIN 51130
Slip resistance – barefoot area	The application group is specified by the manufacturer				DIN 51097