



Sizes	35 3/8" x 35 3/8" ± 20mm
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	Technical features	Test method	Requisites for nominal size N			Echo		
			7 cm ≤ N < 15 cm	N ≥ 15 cm		Matte rectified	Textured rectified 20mm 35 3/8" x 35 3/8"	Textured rectified 20mm 35 3/8" x 35 3/8"
			(mm)	(%)	(mm)			
Regularity features		Length and width	± 0,9 (*)	± 0,6 (*)	± 2,0 (*)	±0.3% ±1.0mm	±0.3% ±1.0mm	±0.3% ±1.0mm
		Thickness	± 0,9 (*)	± 5 (**)	± 0,5 (**)	±5.0% ±0.5mm	±5.0% ±0.5mm	±5.0% ±0.5mm
		Straightness of sides	± 0,75 (***)	± 0,5 (***)	± 1,5 (***)	±0.3% ±0.8mm	±0.3% ±0.8mm	±0.3% ±0.8mm
		Perpendicularity	± 0,75 (****)	± 0,5 (****)	± 2,0 (****)	±0.3% ±1.5mm	±0.3% ±1.5mm	±0.3% ±1.5mm
		Surface flatness	c.c. ± 0,75	c.c. ± 0,5	c.c. ± 2,0	±0.4% ±1.8mm	Not applicable to "strong" structures	Not applicable to "strong" structures
			e.c. ± 0,75	e.c. ± 0,5	e.c. ± 2,0			
w. ± 0,75			w. ± 0,5	w. ± 2,0				
Structural features		Water absorption	ISO 10545-3	E _B ≤ 0,5%		≤0.1%	≤0.1%	≤0.1%
			ASTM C373-18	Requirement ANSI A137.1-2017 Water Absorption Max < 0,5%		≤0.5%	≤0.5%	≤0.5%
Bulk mechanical features		Breaking strenght	ISO 10545-4	S ≥ 700N (for thickness < 7,5mm) S ≥ 1300N (for thickness ≥ 7,5mm)		S ≥ 10000 N		S ≥ 10000 N
		Bending resistance		R ≥ 35 N/mm ²		R ≥ 45 N/mm ²	R ≥ 45 N/mm ²	R ≥ 45 N/mm ²
		Bending and breaking load resistance	EN 1339 Annex F	-		≥T11 90x90	≥T11 90x90	≥T11 90x90
		Impact resistance	ISO 10545-5	Declared value		≥0.55	≥0.55	≥0.55
Surface mechanical features		Mohs hardness	EN 101	-		MOHS 8	MOHS 8	MOHS 8
		Deep abrasion resistance of unglazed tiles	ISO 10545-6	≤ 175 mm ³		≤150mm ³	≤150mm ³	≤150mm ³
Thermo-igrometric features		Coefficient of linear thermal expansion	ISO 10545-8	Declared value		≤7MK-1	≤7MK-1	≤7MK-1
		Thermal shock resistance	ISO 10545-9	Test passed in accordance with ISO 10545-1		Resistant	Resistant	Resistant
		Moisture expansion (in mm/m)	ISO 10545-10	Declared value		≤0.01% (0.1mm/m)	≤0.01% (0.1mm/m)	≤0.01% (0.1mm/m)
		Frost resistance	ISO 10545-12	Test passed in accordance with ISO 10545-1		Resistant	Resistant	Resistant

* Permitted deviation, in % or mm, from the average size of each tile (2 or 4 sides) with respect to the manufacturing size (W).
 ** Permitted deviation, in % or mm, from the average thickness of each tile with respect to the cited manufacturing thickness (W).
 *** Maximum permitted straightness deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).
 **** Maximum permitted perpendicularity deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).
 ***** Maximum permitted centre curvature deviation, in % or mm, with respect to the diagonal calculated according to manufacturing sizes (W).
 e.c. Maximum permitted corner curvature deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).
 w. Maximum permitted bending deviation, in % or mm, with respect to the diagonal calculated according to manufacturing sizes (W).
 (1) Determining the slip resistance of pedestrian surfaces; not applicable to sports flooring or road traffic flooring.
 (2) The anti-slip performance is guaranteed at the time of delivering the product.
 (3) However, tiles with a DCOF of 0.42 or greater are not necessarily suitable for all projects. The specifier shall determine tiles appropriate for specific project conditions, considering by way of example, but not in limitation, type of use, traffic, expected contaminants, expected maintenance, expected wear, and manufacturers' guidelines and recommendations."
 (4) For further details, please refer to the outdoor design general catalogue.
 (5) Only for products with 20 mm thickness



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	Technical features	Test method	Requisites for nominal size N			Echo		
			7 cm ≤ N < 15 cm		N ≥ 15 cm	Matte rectified	Textured rectified 20mm 35¾"x35¾"	Textured rectified 20mm 35¾"x35¾"
			(mm)	(%)	(mm)			
Physical properties	Bond strenght	EN 1348	Declared value			≥1.0 N/mm ² (Class C2 - EN 12004)	≥1.0 N/mm ² (Class C2 - EN 12004)	≥1.0 N/mm ² (Class C2 - EN 12004)
	Reaction to fire	-	Class A1 or A1 _{fl}			A1 - A1 _{fl}	A1 - A1 _{fl}	A1 - A1 _{fl}
Chemical features	Resistance to household chemicals and swimming pool salts	ISO 10545-13	Minimum B class			A	A	A
	Resistance to low concentrations of acids and alkalis		Declared class			LA	LA	LA
	Resistance to high concentrations of acids and alkalis		Declared class			HA	HA	HA
	Stain resistance	ISO 10545-14	Declared class			5	5	5
Safety characteristics	Booted ramp test	DIN 51130	Declared class			R11	R11	R11
	Barefoot Ramp test	DIN 51097	Declared value			A+B+C	A+B+C	A+B+C
	Pendulum friction Test	BS 7976	PTV ≥ 36 classifies the surface as "low slip risk"			≥36Dry ≥36Wet	≥36Dry ≥36Wet	≥36Dry ≥36Wet
		AS 4586	Declared Classification of the new pedestrian surface materials according to the Pendulum Test			Class P4	Class P4	Class P4
		UNE-ENV 12633	Declared value			Class C3	Class C3	Class C3
	Coefficient of friction	B.C.R.A. Rep. CEC/81	Min. Dec. 236/89 of 14/06/89 μ >0.40 for a sliding leather element on a dry floor μ >0.40 for a sliding hard rubber element on a wet floor			>0.40Asciutto >0.40Bagnato	>0.40Asciutto >0.40Bagnato	>0.40Asciutto >0.40Bagnato
Dynamic coefficient of friction (DCOF)	ANSI A.137.1	ANSI A.137.1-2017 Requires a minimum value of 0.42 for level interior space expected to be walked upon when wet. (3)			> 0.42 Wet	> 0.42 Wet	> 0.42 Wet	

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