



Sizes	47 1/4"x109 1/2" ± 6mm	47 1/4"x94 1/2" ± 9mm	47 1/4"x47 1/4" ± 9mm	23 3/8"x47 1/4" ± 9mm	23 3/8"x47 1/4" ± 6mm	23 3/8"x23 3/8" ± 9mm
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	Technical features	Test method	Requisites for nominal size N			Marvel Onyx		
			7 cm ≤ N < 15 cm		N ≥ 15 cm	Polished rectified 6mm	Polished rectified 9mm	Polished rectified 9mm 47 1/4"x47 1/4"
			(mm)	(%)	(mm)			
Regularity features	 Length and width Thickness Straightness of sides Perpendicularity (Measurement only on short edges when L/l ≥ 3)	ISO 10545-2	± 0,9 (*) Non-rect. ± 0,4 (*) Rect.	± 0,6 (*) Non-rect. ± 0,3 (*) Rect.	± 2,0 (*) Non-rect. ± 1,0 (*) Rect.	Suitable for	Suitable for	Suitable for
			± 0,5 (**)	± 5 (**)	± 0,5 (**)	Suitable for	Suitable for	Suitable for
			± 0,8 (***) Non-rect. ± 0,4 (***) Rect.	± 0,5 (***) Non-rect. ± 0,3 (***) Rect.	± 1,5 (***) Non-rect. ± 0,8 (***) Rect.	Suitable for	Suitable for	Suitable for
			± 0,8 (***) Non-rect. ± 0,4 (***) Rect.	± 0,5 (***) Non-rect. ± 0,3 (***) Rect.	± 2,0 (***) Non-rect. ± 1,5 (***) Rect.	Suitable for	Suitable for	Suitable for
	 Surface flatness		c.c. ± 0,8 Non-rect. c.c. ± 0,6 Rect.	c.c. ± 0,5 Non-rect. c.c. ± 0,4 Rect.	c.c. ± 2,0 Non-rect. c.c. ± 1,8 Rect.	Suitable for	Suitable for	Suitable for
			e.c. ± 0,8 Non-rect. e.c. ± 0,6 Rect.	e.c. ± 0,5 Non-rect. e.c. ± 0,4 Rect.	e.c. ± 2,0 Non-rect. e.c. ± 1,8 Rect.			
Structural features	 Water absorption level (in% by mass)	ISO 10545-3	E ≤ 0,5% Individual Maximum 0,6%			≤ 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 Bending resistance	ISO 10545-4	S ≥ 700N (for thickness < 7,5mm) S ≥ 1300N (for thickness ≥ 7,5mm)			S ≥ 1000 N	S ≥ 1500 N	S ≥ 1000 N
			R ≥ 35 N/mm ²			R ≥ 40 N/mm ²	R ≥ 40 N/mm ²	R ≥ 40 N/mm ²
	 Bending and breaking load resistance (4)(5)	EN 1339 Annex F	-					
	 Impact resistance	ISO 10545-5	Declared value			≥ 0.55	≥ 0.55	≥ 0.55
Surface features	 Deep abrasion resistance of unglazed tiles	ISO 10545-6	≤ 175 mm ³			≤ 150mm ³	≤ 150mm ³	≤ 150mm ³

- * 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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			(mm)		(%) (mm)			
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
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					
	Stain resistance	ISO 10545-14	Declared class			5	5	5
Safety characteristics (1)(2)	Booted ramp test	DIN EN 16165 ANNEX B (EX DIN 51130)	Declared class			N.C.	N.C.	N.C.
	Barefoot Ramp test	DIN EN 16165 ANNEX A (EX DIN 51097)	Declared value					
	Pendulum friction Test	BS EN 16165 ANNEX C (EX BS 7976)	PTV ≥ 36 classifies the surface as "low slip risk"			≥ 36 Dry ≤ 24 Wet	≥ 36 Dry ≤ 24 Wet	≥ 36 Dry ≤ 24 Wet
		AS 4586	Declared Classification of the new pedestrian surface materials according to the Pendulum Test					
		UNE 41901 EX:2017	Declared value					
	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 326.3	-			Dry DCOF ≥ 0.42	Dry DCOF ≥ 0.42	Dry DCOF ≥ 0.42	

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