



Sizes	63"x126" ± 6mm	63"x63" ± 6mm	47¼"x109½" ± 6mm	47¼"x94½" ± 9mm	47¼"x47¼" ± 9mm	29½"x59" ± 9.5mm	29½"x29½" ± 9.5mm	23¾"x23¾" ± 9mm	23¾"x23¾" ± 20mm	17¾"x35¾" ± 9mm	11¾"x23¾" ± 9mm
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	Technical features	Test method	Requisites for nominal size N			Marvel Pro						
			7 cm ≤ N < 15 cm	N ≥ 15 cm		Polished rectified	Polished rectified 6mm	Matte rectified 9mm	Matte rectified 6mm 47¼"x109½"	Textured rectified 9mm 11¾"x23¾"	Textured rectified 20mm 23¾"x23¾"	
			(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	±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	±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	±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	±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	±0.3% ±1.5mm	±0.3% ±1.5mm	±0.4% ±1.8mm	±0.4% ±1.8mm	Not applicable to "strong" structures	±0.4% ±1.8mm	
			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 <sub>B</sub> ≤ 0,5%			≤0.1%	≤0.1%	≤0.1%	≤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%	≤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 ≥1500 N	S ≥1000 N	S ≥1500 N	S ≥1000 N	S ≥1500 N	S ≥10000 N
		Bending resistance		R ≥ 35 N/mm <sup>2</sup>			R ≥40 N/mm <sup>2</sup>	R ≥40 N/mm <sup>2</sup>	R ≥40 N/mm <sup>2</sup>	R ≥40 N/mm <sup>2</sup>	R ≥40 N/mm <sup>2</sup>	R ≥45 N/mm <sup>2</sup>
		Bending and breaking load resistance	EN 1339 Annex F	-								≥U7 30x60   ≥T11 60x60   ≥U4 60x120
		Impact resistance	ISO 10545-5	Declared value			≥0.55	≥0.55	≥0.55	≥0.55	≥0.55	≥0.55
Surface mechanical features		Mohs hardness	EN 101	-			MOHS 5	MOHS 5	MOHS 6	MOHS 6	MOHS 7	MOHS 8
		Deep abrasion resistance of unglazed tiles	ISO 10545-6	≤ 175 mm <sup>3</sup>			≤150mm <sup>3</sup>	≤150mm <sup>3</sup>	≤150mm <sup>3</sup>	≤150mm <sup>3</sup>	≤150mm <sup>3</sup>	≤150mm <sup>3</sup>
Thermo-igrometric features		Coefficient of linear thermal expansion	ISO 10545-8	Declared value			≤7MK-1	≤7MK-1	≤7MK-1	≤7MK-1	≤7MK-1	≤7MK-1
		Thermal shock resistance	ISO 10545-9	Test passed in accordance with ISO 10545-1			Resistant	Resistant	Resistant	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)	≤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	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		Marvel Pro					
			7 cm ≤ N < 15 cm	N ≥ 15 cm	Polished rectified	Polished rectified 6mm	Matte rectified 9mm	Matte rectified 6mm 47¼"x109½"	Textured rectified 9mm 11¾"x23¾"	Textured rectified 20mm 23¾"x23¾"
			(mm)	(%) (mm)						
Physical properties	Bond strenght	EN 1348	Declared value		≥1.0 N/mm <sup>2</sup> (Class C2 - EN 12004)	≥1.0 N/mm <sup>2</sup> (Class C2 - EN 12004)	≥1.0 N/mm <sup>2</sup> (Class C2 - EN 12004)	≥1.0 N/mm <sup>2</sup> (Class C2 - EN 12004)	≥1.0 N/mm <sup>2</sup> (Class C2 - EN 12004)	≥1.0 N/mm <sup>2</sup> (Class C2 - EN 12004)
	Reaction to fire	-	Class A1 or A1 <sub>fl</sub>		A1 - A1 <sub>fl</sub>	A1 - A1 <sub>fl</sub>	A1 - A1 <sub>fl</sub>	A1 - A1 <sub>fl</sub>	A1 - A1 <sub>fl</sub>	A1 - A1 <sub>fl</sub>
Chemical features	Resistance to household chemicals and swimming pool salts	ISO 10545-13	Minimum B class		A	A	A	A	A	A
	Resistance to low concentrations of acids and alkalis		Declared class		LA	LA	LA	LA	LA	LA
	Resistance to high concentrations of acids and alkalis		Declared class				HA	HA	HA	HA
	Stain resistance	ISO 10545-14	Declared class		5	5	5	5	5	5
Safety characteristics	Booted ramp test	DIN 51130	Declared class		N.C.	N.C.	R9	R9	R11	R11
	Barefoot Ramp test	DIN 51097	Declared value				A	A	A+B	A+B+C
	Pendulum friction Test	BS 7976	PTV ≥ 36 classifies the surface as "low slip risk"		≥ 36 Dry ≤ 24 Wet	≥ 36 Dry ≤ 24 Wet	PTV ≥ 36 Wet on demand	PTV ≥ 36 Wet on demand	≥36Dry ≥36Wet	≥36Dry ≥36Wet
		AS 4586	Declared Classification of the new pedestrian surface materials according to the Pendulum Test				P3 on demand	P3 on demand	Class P4	Class P4
		UNE-ENV 12633	Declared value				C2 on demand	C2 on demand	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	>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	> 0.42 Wet	> 0.42 Wet	> 0.42 Wet

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