



Sizes	120x240 cm 47¼"x94½" ±9mm	120x120 cm 47¼"x47¼" ±9mm	75x150 cm 29½"x59" ±9.5mm	75x75 cm 29½"x29½" ±9.5mm	60x60 cm 23¾"x23¾" ±9mm	45x90 cm 17¾"x35¾" ±9mm	30x60 cm 11¾"x23¾" ±9mm
-------	------------------------------	------------------------------	------------------------------	------------------------------	----------------------------	----------------------------	----------------------------

	Technical features	Test method	Requisites for nominal size N			Marvel Gems			
			7 cm ≤ N < 15 cm	N ≥ 15 cm		Polished rectified 9mm	Polished rectified 9.5mm	Matte rectified	
			(mm)	(%)	(mm)				
Regularity features		Length and width	ISO 10545-2	± 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	±0.3% ±1.5mm	±0.3% ±1.5mm	±0.4% ±1.8mm
				e.c. ± 0,75	e.c. ± 0,5	e.c. ± 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 ≥1500 N	S ≥1500 N	S ≥1500 N
		Bending resistance		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	EN 1339 Annex F	-					
Surface mechanical features		Impact resistance	ISO 10545-5	Declared value			≥0.55	≥0.55	≥0.55
		Mohs hardness	EN 101	-			MOHS 5	MOHS 5	MOHS 6
Thermo-igrometric features		Deep abrasion resistance of unglazed tiles	ISO 10545-6	≤ 175 mm ³			≤150mm ³	≤150mm ³	≤150mm ³
		Coefficient of linear thermal expansion	ISO 10545-8	Declared value			≤7MK-1	≤7MK-1	≤7MK-1
Thermo-igrometric features		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



Sizes	120x240 cm 47¼"x94½" ±9mm	120x120 cm 47¼"x47¼" ±9mm	75x150 cm 29½"x59" ±9.5mm	75x75 cm 29½"x29½" ±9.5mm	60x60 cm 23¾"x23¾" ±9mm	45x90 cm 17¾"x35¾" ±9mm	30x60 cm 11¾"x23¾" ±9mm
-------	------------------------------	------------------------------	------------------------------	------------------------------	----------------------------	----------------------------	----------------------------

	Technical features	Test method	Requisites for nominal size N			Marvel Gems			
			7 cm ≤ N < 15 cm		N ≥ 15 cm	Polished rectified 9mm	Polished rectified 9.5mm	Matte rectified	
			(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
		Stain resistance	ISO 10545-14	Declared class			5	5	5
Safety characteristics		Booted ramp test	DIN 51130	Declared class			N.C.	N.C.	R10
		Barefoot Ramp test	DIN 51097	Declared value					A
		Pendulum friction Test	BS 7976	PTV ≥ 36 classifies the surface as "low slip risk"			≥ 36 Dry ≤ 24 Wet	≥ 36 Dry ≤ 24 Wet	≥36Dry ≥36Wet
			AS 4586	Declared Classification of the new pedestrian surface materials according to the Pendulum Test					Class P3
			UNE-ENV 12633	Declared value					C2 on demand
		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		

- * 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