



Sizes

23 $\frac{3}{4}$ "x23 $\frac{3}{4}$ "
 \pm 9mm

	Technical features	Test method	Requisites for nominal size N			Marvel Gems	
			7 cm \leq N < 15 cm (mm)	N \geq 15 cm (%) (mm)		Polished rectified	Matte rectified
Regularity features	 Length and width Thickness Straightness of sides Perpendicularity (Measurement only on short edges when L/l \geq 3)	ISO 10545-2	\pm 0,9 (*) Non-rect. \pm 0,4 (*) Rect.	\pm 0,6 (*) Non-rect. \pm 0,3 (*) Rect.	\pm 2,0 (*) Non-rect. \pm 1,0 (*) Rect.	Suitable for	Suitable for
			\pm 0,5 (**)	\pm 5 (**)	\pm 0,5 (**)	Suitable for	Suitable for
			\pm 0,8 (***) Non-rect. \pm 0,4 (***) Rect.	\pm 0,5 (***) Non-rect. \pm 0,3 (***) Rect.	\pm 1,5 (***) Non-rect. \pm 0,8 (***) Rect.	Suitable for	Suitable for
	\pm 0,8 (***) Non-rect. \pm 0,4 (***) Rect.		\pm 0,5 (***) Non-rect. \pm 0,3 (***) Rect.	\pm 2,0 (***) Non-rect. \pm 1,5 (***) Rect.	Suitable for	Suitable for	
 Surface flatness		c.c. \pm 0,8 Non-rect. c.c. \pm 0,6 Rect.	c.c. \pm 0,5 Non-rect. c.c. \pm 0,4 Rect.	c.c. \pm 2,0 Non-rect. c.c. \pm 1,8 Rect.	Suitable for	Suitable for	
		e.c. \pm 0,8 Non-rect. e.c. \pm 0,6 Rect.	e.c. \pm 0,5 Non-rect. e.c. \pm 0,4 Rect.	e.c. \pm 2,0 Non-rect. e.c. \pm 1,8 Rect.			
		w. \pm 0,8 Non-rect. w. \pm 0,6 Rect.	w. \pm 0,5 Non-rect. w. \pm 0,4 Rect.	w. \pm 2,0 Non-rect. w. \pm 1,8 Rect.			
Structural features	 Water absorption level (in% by mass)	ISO 10545-3	\leq 0,5% Individual Maximum 0,6%			\leq 0,1%	\leq 0,1%
		ASTM C373-18	Requirement ANSI A137.1-2017 Water Absorption Max < 0,5%			\leq 0,5%	\leq 0,5%
Bulk mechanical features	 Breaking strenght Bending resistance	ISO 10545-4	S \geq 700N (for thickness < 7,5mm) S \geq 1300N (for thickness \geq 7,5mm)			S \geq 1500 N	S \geq 1500 N
			R \geq 35 N/mm ²			R \geq 40 N/mm ²	R \geq 40 N/mm ²
	 Bending and breaking load resistance ⁽⁴⁾⁽⁵⁾	EN 1339 Annex F	-				
Surface mechanical features	 Impact resistance	ISO 10545-5	Declared value			\geq 0,55	\geq 0,55
	 Mohs hardness	EN 101	-			MOHS 5	MOHS 6
	 Deep abrasion resistance of unglazed tiles	ISO 10545-6	\leq 175 mm ³			\leq 150mm ³	\leq 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



Sizes	23% [*] x 23% [*] ± 9mm
-------	--

	Technical features	Test method	Requisites for nominal size N			Marvel Gems		
			7 cm ≤ N < 15 cm		N ≥ 15 cm	Polished rectified	Matte rectified	
			(mm)	(%)	(mm)			
Thermo-igrometric features	Coefficient of linear thermal expansion	ISO 10545-8	Declared value			≤7MK ⁻¹	≤7MK ⁻¹	
	Thermal shock resistance	ISO 10545-9	Test passed in accordance with ISO 10545-1			Resistant	Resistant	
	Moisture expansion (in mm/m)	ISO 10545-10	Declared value			≤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	
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)	
	Reaction to fire	-	Class A1 or A1 _{fl}			A1 - A1 _{fl}	A1 - A1 _{fl}	
Chemical features	Resistance to household chemicals and swimming pool salts Resistance to low concentrations of acids and alkalis Resistance to high concentrations of acids and alkalis	ISO 10545-13	Minimum B class			A	A	
			Declared class			LA	LA	
			Declared class			HA	HA	
	Stain resistance	ISO 10545-14	Declared class			5	5	
Safety characteristics (1)(2)		Booted ramp test	DIN 51130	Declared class			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	≥36Dry ≥36Wet
			AS 4586	Declared Classification of the new pedestrian surface materials according to the Pendulum Test				Class P3
			UNE-ENV 12633 UNE 41901:2017 EX	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
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		

- * 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