



Sizes	120x278 cm	120x240 cm	75x150 cm	120x120 cm	45x90 cm	75x75 cm	60x60 cm	30x60 cm
Sizes	47 1/4"x109 1/2"	47 1/4"x94 1/2"	29 1/2"x59"	47 1/4"x47 1/4"	17 3/4"x35 3/8"	29 1/2"x29 1/2"	23 5/8"x23 5/8"	11 3/4"x23 5/8"
	± 6mm	± 9mm	± 9.5mm	± 9mm	± 9mm	± 9.5mm	± 9mm	± 9mm

Characteristics	Test Method	Requirements for nominal size N			MARVEL PRO									
		Requirements for nominal size N		Polished rectified	Polished rectified ± 6mm 120x278 cm	Polished rectified ± 9mm 30x60 cm, 60x60 cm, 45x90 cm	Polished rectified ± 9.5mm 75x75 cm, 75x150 cm	Satin rectified	Satin rectified ± 9mm 60x60 cm	Matt rectified	Matt rectified ± 9mm 30x60 cm, 60x60 cm, 45x90 cm	Textured rectified		
		7 cm ≤ N < 15 cm	N ≥ 15 cm											
Regularity characteristics	ISO 10545-2	(mm)	(%)	(mm)	Polished rectified	Polished rectified ± 6mm 120x278 cm	Polished rectified ± 9mm 30x60 cm, 60x60 cm, 45x90 cm	Polished rectified ± 9.5mm 75x75 cm, 75x150 cm	Satin rectified	Satin rectified ± 9mm 60x60 cm	Matt rectified	Matt rectified ± 9mm 30x60 cm, 60x60 cm, 45x90 cm	Textured rectified	
Length and width Length and width	ISO 10545-2	± 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	±0.3% ±1.0mm	±0.3% ±1.0mm	±0.3% ±1.0mm	
Thickness Thickness		± 0,5 (**)	± 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	±5.0% ±0.5mm	±5.0% ±0.5mm	±5.0% ±0.5mm	
Straightness of sides 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	±0.3% ±0.8mm	±0.3% ±0.8mm	±0.3% ±0.8mm	±0.3% ±0.8mm
Rectangularity (Measurement only on short edges when L/l ≥ 3) Rectangularity (Measurement only on short edges when L/l ≥ 3)		± 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	±0.3% ±1.5mm	±0.3% ±1.5mm	±0.3% ±1.5mm	±0.3% ±1.5mm
Surface flatness Surface flatness	ISO 10545-2	c.c. ± 0,75	c.c. ± 0,5	c.c. ± 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	±0.4% ±1.8mm	±0.4% ±1.8mm	Not applicable	
e.c. ± 0,75		e.c. ± 0,5	e.c. ± 2,0											
w. ± 0,75		w. ± 0,5	w. ± 2,0											
Structural features	ISO 10545-3	$E_B \leq 0,5\%$ Individual Maximum 0,6% - Individual Maximum 0,6%			≤0.1%	≤0.1%	≤0.1%	≤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%	≤0.5%	≤0.5%	≤0.5%	≤0.5%	
Bulk mechanical features	ISO 10545-4	S ≥ 700N (per spessore < 7,5mm - for thickness < 7,5mm) S ≥ 1300N (per spessore ≥ 7,5mm - for thickness ≥ 7,5mm)			S ≥ 1500 N	S ≥ 1000 N	S ≥ 1500 N	S ≥ 1500 N	S ≥ 1500 N	S ≥ 1500 N	S ≥ 1500 N	S ≥ 1500 N	S ≥ 1500 N	
Modulus of Rupture Modulus of Rupture	EN 1339 Annex F	R ≥ 35 N/mm ²			R ≥ 40 N/mm ²	R ≥ 40 N/mm ²	R ≥ 40 N/mm ²	R ≥ 40 N/mm ²	R ≥ 40 N/mm ²	R ≥ 40 N/mm ²	R ≥ 40 N/mm ²	R ≥ 40 N/mm ²	R ≥ 40 N/mm ²	
Bending Strength and Breaking Load Bending Strength and Breaking Load		-			-	-	-	-	-	-	-	-	-	
Impact resistance, as coefficient of restitution Impact resistance, as coefficient of restitution	ISO 10545-5	Declared value			≥0.55	≥0.55	≥0.55	≥0.55	≥0.55	≥0.55	≥0.55	≥0.55	≥0.55	
Surface mechanical features	EN 101	Mohs hardness			MOHS 5	MOHS 5	MOHS 5	MOHS 5	MOHS 5	MOHS 5	MOHS 6	MOHS 6	MOHS 7	
Resistance to deep abrasion of unglazed tiles (removed volume) Resistance to deep abrasion of unglazed tiles (removed volume)	ISO 10545-6	≤ 175 mm ³			≤150mm ³	≤150mm ³	≤150mm ³	≤150mm ³	≤150mm ³	≤150mm ³	≤150mm ³	≤150mm ³	≤150mm ³	
Thermo-igrometric features	ISO 10545-8	Declared value			≤7 1/mk	≤7 1/mk	≤7 1/mk	≤7 1/mk	≤7 1/mk	≤7 1/mk	≤7 1/mk	≤7 1/mk	≤7 1/mk	
Thermal shock resistance Thermal shock resistance	ISO 10545-9	Pass according to EN ISO 10545-1			Resiste	Resiste	Resiste	Resiste	Resiste	Resiste	Resiste	Resiste	Resiste	
Moisture expansion (in mm/m) 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)	≤0.01% (0.1mm/m)	≤0.01% (0.1mm/m)	≤0.01% (0.1mm/m)	
Frost resistance Frost resistance	ISO 10545-12	Pass according to EN ISO 10545-1			Resiste	Resiste	Resiste	Resiste	Resiste	Resiste	Resiste	Resiste	Resiste	
Physical properties	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)	≥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)	≥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 Reaction to fire	-	Class A1 or A1 _{fl}			A1 - A1 _{fl}	A1 - A1 _{fl}	A1 - A1 _{fl}	A1 - A1 _{fl}	A1 - A1 _{fl}	A1 - A1 _{fl}	A1 - A1 _{fl}	A1 - A1 _{fl}	A1 - A1 _{fl}	
Chemical features	ISO 10545-13	Minimum Class B			A	A	A	A	A	A	A	A	A	
Resistance to low concentrations of acids and alkalis Resistance to low concentrations of acids and alkalis	ISO 10545-13	Declared Class			LA	LA	LA	LA	LA	LA	LA	LA	LA	
Resistance to high concentrations of acids and alkalis Resistance to high concentrations of acids and alkalis		Declared Class			0	-	0	0	-	-	HA	HA	HA	
Resistance to staining for glazed tiles Resistance to staining for glazed tiles	ISO 10545-14	Declared Class			5	5	5	5	5	5	5	5	5	
Safety characteristics	DIN 51130	Declared Class			N.C.	N.C.	N.C.	N.C.	N.C.	N.C.	R9	R9	R11	
Barefoot Ramp Test Barefoot Ramp Test	DIN 51097	Declared value			0	0	0	0	0	0	A	A	A+B	
Pendulum Friction Test Pendulum Friction Test	BS 7976	PTV 36 classifies the surface as "low slip risk"			≥36Dry ≥ 36Wet	≥36Dry ≥ 36Wet	≥ 36 Dry ≤ 24 Wet	≥ 36 Dry ≤ 24 Wet	≥36Dry ≥ 36Wet	≥ 36 Dry ≤ 24 Wet	≥36Dry ≥ 36Wet	PTV ≥ 36 Wet on demand / su richiesta	≥36Dry ≥ 36Wet	
Declared Classification of the new pedestrian surface materials according to the Pendulum Test	AS 4586	-			-	-	-	-	-	-	P3 on demand	P3 on demand	Class P4	
	UNE-ENV 12633	Declared value			-	-	-	-	-	-	C2 on demand	C2 on demand	Class C3	
Coefficient of friction (COF) Coefficient of friction (COF)	B.C.R.A. Rep. CEC/81	D. M. 236/89 del 14/06/89 μ >0,40 per elemento scivolante cuoio su pavimentazione asciutta μ >0,40 per elemento scivolante gomma dura su pavimentazione bagnata			>0.40Asciutto <0.40Bagnato	>0.40Asciutto <0.40Bagnato	>0.40Asciutto <0.40Bagnato	>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) 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)			<0.42Wet	<0.42Wet	<0.42Wet	<0.42Wet	<0.42Wet	<0.42Wet	>0.42Wet	>0.42Wet	>0.42Wet	

- * Deviazione ammissibile, in % oppure mm, della dimensione media di ogni piastrella (2 oppure 4 lati) dalla dimensione di fabbricazione (W).
The permissible deviation, in % or mm, of the average size for each tile (2 or 4 sides) from work size (W).
- ** Deviazione ammissibile, in % oppure mm, dello spessore medio di ogni piastrella dallo spessore riportato nella dimensione di fabbricazione (W).
The permissible deviation, in % or mm, of the average thickness for each tile from the work size thickness (W).
- *** Deviazione massima ammissibile di rettilineità, in % oppure mm, in rapporto alle dimensioni di fabbricazione (W) corrispondenti.
The maximum permissible deviation from straightness, in % or mm, related to the corresponding work sizes (W).
- **** Deviazione massima ammissibile di ortogonalità, in % oppure mm, in rapporto alle dimensioni di fabbricazione (W) corrispondenti.
The maximum permissible deviation from rectangularity, in % or mm, related to the corresponding work sizes (W).
- c.c. Deviazione massima ammissibile della curvatura del centro, in % oppure mm, in rapporto alla diagonale calcolata secondo le dimensioni di fabbricazione (W).
The maximum permissible deviation from centre curvatures, in % or mm, related to diagonal calculated from the work sizes (W).
- e.c. Deviazione massima ammissibile della curvatura dello spigolo, in % oppure mm, in rapporto alle dimensioni di fabbricazione (W) corrispondenti.
The maximum permissible deviation from edge curvatures, in % or mm, related to the corresponding work sizes (W).

- w. Deviazione massima ammissibile dello svergolamento, in % oppure mm, in rapporto alla diagonale calcolata secondo le dimensioni di fabbricazione (W).
The maximum permissible deviation from warpage, in % or mm, related to diagonal calculated from the work sizes (W).
- Determinazione della resistenza allo scivolamento delle superfici pedonabili; non si applica alle pavimentazioni sportive ed alle pavimentazioni stradali veicolari.
- (1) Determination of slip resistance of pedestrian surfaces; it does not cover sports surfaces and road surfaces for vehicles (skid resistance).
- (2) Le prestazioni anti-slip vengono garantite al momento della consegna del prodotto.
Anti-slip performance is guaranteed at the time of delivery of the product.
However, tiles with a DCOF of 0.42 or greater are not necessarily suitable for all projects.
- (3) 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 outdoor design general catalogue.
- (5) Only for products with 20 mm thickness.

