

# LEA

CERAMICHE

## Tender specifications | ANTHOLOGY collection

Supply of LEA Ceramiche porcelain stoneware tiles for walls and floors.

### Product characteristics

LEA Ceramiche coloured-body porcelain stoneware tiles, unglazed, composed of a very fine mixture of quality clay with the addition of feldspar, quartz and kaolin, manufactured by dry pressing of atomized powders and subsequently sintered by industrial firing at temperatures above 1200°C.

The complete vitrification of the tiles allows for a compact, non-absorbent, frost-proof product, resistant to bending, impacts, staining, chemical attack and thermal shock.

### Compliance with EN 14411-G / ISO 13006-G

The ANTHOLOGY collection is in compliance with the regulations required for first quality products in Italy and Europe UNI EN 14411-G and internationally through ISO 13006-G.

### Quality and environmental certifications

The conservation of the product characteristics is guaranteed by the Quality Management System put into practice by LEA Ceramiche in its plants and certified in accordance with UNI EN ISO 9001.

The collection is manufactured in plants with UNI EN ISO 14001 certified Environmental Management Systems (internationally recognized standard) and EMAS (Regulation CE 1221/09 - eco-management and audit community system).

The collection helps to meet the criteria for obtaining LEED credits. The content of "pre-consumer" recycled material is 40%, as certified by a qualified external body (LEED V4 Regulations - MR Credit).

The product contains no VOC (volatile organic compounds) and got the GREENGUARD GOLD certification.

The Environmental Product Declaration (EPD) is available, this tool communicates clearly the environmental performances of the ANTHOLOGY collection based on its Life Cycle Assessment (LCA).

For all the items in the collection, the calculation of the carbon footprint (PCF) over the entire life cycle is available, expressed as CO<sub>2</sub> equivalent per unit of product, certified according to ISO 14067.

The collection complies with the technical specifications and contractual conditions applicable to porcelain stoneware outlined in the Ministerial Decree of 23 June 2022 "Minimum environmental criteria for the contracting of the design and execution of works for building projects".

### Antibacterial properties

Thanks to Protect antibacterial technology, the tiles from the ANTHOLOGY collection have continuous, effective and durable protection against the proliferation of bacteria, tested and certified in accordance with ISO 22196 and ASTM E3031. (Not for ROUGH L2-20 mm\* surface).

#### Commercial description of the product

Company	LEA CERAMICHE (Panariagroup Industrie Ceramiche S.p.A.)			
Collection	ANTHOLOGY			
Colours	01 WHITE, 02 DESERT, 03 EARTH, 04 GRAY, 05 DARK			
Sizes	30x60 cm Rect NATURAL			
	60x60 cm Rect NATURAL	60x60 cm Rect WORN	60x60 cm Rect ROUGH	
	60x120 cm Rect NATURAL	60x120 cm Rect WORN	60x120 cm Rect ROUGH	60x120 cm Rect ROUGH L2-20mm
	120x120 cm Rect NATURAL			
Surfaces	NATURAL, WORN, ROUGH, ROUGH L2-20mm*			
Edges	RECTIFIED (RECT)			
Thickness	9 mm - L2-20mm			



ISO 9001



ISO 14001



EMAS



GREENGUARD GOLD



LEED



LEED



EPD



CFP



RECYCLED MATERIALS



CRITERI AMBIENTALI MINIMI



ANTIBACTERIAL

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### Technical features

Product type: coloured-body porcelain stoneware (UGL)

According to: ISO 13006-G (Group Bla), EN 14411-G (Group Bla)

Technical features		Test method	Required values ISO 13006-G / EN 14411-G Bla-UGL Group	Average values ANTHOLOGY
Water absorption		ISO 10545-3	≤ 0,5%	0,05%
Breaking strength (S)		ISO 10545-4	≥ 1300 N	Thickness 9 mm: 2200 N Thickness 20 mm: 13600 N
Modulus of rupture		ISO 10545-4	≥ 35 N/mm <sup>2</sup>	50 N/mm <sup>2</sup>
Deep abrasion resistance		ISO 10545-6	≤ 175 mm <sup>3</sup>	145 mm <sup>3</sup>
Linear thermal expansion		ISO 10545-8	No provision	$\alpha \leq 7 \cdot 10^{-6} \text{ } ^\circ\text{C}^{-1}$
Stain resistance		ISO 10545-14	Class 3 min.	5 RESISTANT
Chemical resistance (*)		ISO 10545-13	As indicated by manufacturer	LA, HA RESISTANT
Frost resistance		ISO 10545-12	No alteration	RESISTANT
Dimensions	Lenght and width	ISO 10545-2	RECT ± 0,3%, max ± 1 mm	COMPLIANT
	Straightness of sides	ISO 10545-2	RECT ± 0,3%, max ± 0,8 mm	COMPLIANT
	Rectangularity	ISO 10545-2	RECT ± 0,3%, max ± 1,5 mm	COMPLIANT
	Warpage	ISO 10545-2	RECT ± 0,4%, max ± 1,8 mm	COMPLIANT
	Thickness	ISO 10545-2	RECT ± 5%, max ± 0,5 mm	COMPLIANT
Slip resistance	DIN EN 16165 - Annex B	-		R9 (WORN) R10 (NATURAL) R11 (ROUGH, ROUGH L2-20mm)
	DIN EN 16165 - Annex A	-		B (NATURAL) C (ROUGH, ROUGH L2-20mm)
	BCR-TORTUS	-		$\mu > 0,40$ (NATURAL, WORN, ROUGH, ROUGH L2-20mm)
	ANSI A326.3	-		ID - DCOF ≥ 0.42 (Dry): NATURAL, WORN IW - DCOF ≥ 0.42 (Wet): NATURAL, WORN IW+: NATURAL (***) EW: ROUGH, ROUGH L2-20mm
	AS/NZS 4586	-		P3 (NATURAL) P4 (ROUGH, ROUGH L2-20mm)
	BS EN 16165 - Annex C	-		PTV 36+Wet (Sl.96): NATURAL PTV 36+Wet (Sl.96 - Sl.55): ROUGH, ROUGH L2-20mm
Shade variation	ANSI A137.1	As indicated by manufacturer	V3 (01 WHITE, 04 GRAY) V4 (02 DESERT, 03 EARTH, 05 DARK)	
Fire reaction	EN 13823	CPR (UE) 305/2011, 2000/147/CE, UNI EN 13501-1	Class A1 (wall)	
	EN 9239-1		Class A1 <sub>f</sub> (floor)	
Thermal conductivity	EN 12524	-	$\lambda = 1,3 \text{ W/m } ^\circ\text{K}$	
Recommended minimum joint (**)	Indoor	-	2 mm (Rect)	
	Outdoor	-	5-6 mm approx	

(\*) Excluding hydrofluoric acid and its derivatives.

(\*\*) The width of grout joints must be established by the installation supervisor, unless grout widths are regulated by national laying standards.

(\*\*\*) With the exception of areas characterized by a higher risk of slipping (such as public showers, indoor swimming pools, etc.) for which an anti-slip surface is recommended (ROUGH).