

## Tender specifications FLOW collection

Supply of Panaria USA porcelain stoneware tiles for walls and floors.

### Product characteristics

Panaria USA full body porcelain stoneware tiles, glazed, 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 ANSI A 137.1

The Flow collection is in compliance with the regulations required for first quality products in USA ANSI A137.1 – Table 10: Porcelain tile.

### Quality and environmental certifications

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 has obtained the GREENGUARD GOLD certification. The Environmental Product Declaration (EPD) is available, this tool communicates clearly the environmental performances of the Flow collection based on its Cycle Assessment (LCA).

The collection is certified by Green Squared, a TCNA initiative aimed to recognize and certify sustainable products according to the ANSI 138.1 law.

### Antibacterial properties

Thanks to Protect antibacterial technology, the tiles from the Flow collection have continuous, effective and durable protection against the proliferation of bacteria, tested and certified in accordance with ISO 22196 and ASTM E3031.

Commercial description of the product	
Company	PANARIA USA
Country of origin	USA
Collection	FLOW
Colours	Ice, Ivory, Grey, Desert, Natural
Nominal Sizes	12"x24"
Surface Finish	GLAZED
Surfaces Processing	NATURAL
Edges	NOT RECTIFIED
Thickness	9 mm



LEED

LEED

40%

GREENGUARD  
GOLD

EPD

TCNA Environmental  
product certification

ANTIMICROBIAL

Water absorption ≤ 0.5 %

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### Technical features

Product type: Porcelain stoneware – Class P1 (GL)

According to: ANSI A137.1

Technical characteristics	Test method	Value required for Porcelain Tile ANSI A137.1: Table 10	Average Values FLOW
Water absorption	ASTM C373	≤ 0.5 %	Conforms
Breaking strength	ASTM C648	≥ 250 lbf	350 lbf
Surface abrasion resistance	ASTM C1027	As indicated by manufacturer	PEI 5 (Ice) PEI 4 (Ivory, Desert, Grey, Natural)
Linear thermal expansion	ASTM C372	not required	$\alpha \leq 4.4 \times 10^{-6} \text{ } ^\circ\text{F}^{-1}$
Thermal shock resistance	ASTM C484	no sample must show visible signs	Conforms
Chemical resistance (*)	ASTM C650	As indicated by manufacturer	A Resistant
Stain resistance	ASTM C1378	As indicated by manufacturer	A Resistant
Freeze/Thaw resistance	ASTM C1026	no sample must show visible signs	Resistant
Bond strength	ASTM C482	≥ 50 PSI (0.34 MPa)	Conforms
Crazing resistance	ASTM C424	As reported	Pass
Warpage edge	ASTM C485 Porcelain	Calibrated: max ±0.50% or max ±0.07"	Conforms
Warpage diagonal	ASTM C485 Porcelain	Calibrated: max ±0.50% or max ±0.07"	Conforms
Nominal dimensions	ASTM C499 Porcelain	Calibrated: max ±3.0% of nominal dimensions	Conforms
Caliber range	ASTM C499 Porcelain	Calibrated: max ±0.50% or max ±0.08"	Conforms
Wedging	ASTM C502 Porcelain	Calibrated: max ±0.50% or max ±0.08"	Conforms
Thickness	ASTM C499	Max range 0.040 inch (1.02 mm)	max ± 0.030 inch
Surface Hardness	Mohs Scale	As reported	Mohs 7
Dynamic Coefficient of Friction (DCOF)	ANSI A326.3	≥ 0.42 (internal wet environments)	≥ 0.42
Shade variation	ANSI A137.1	As indicated by manufacturer	V2
Flame spread	ASTM E84	-	Class A

(\*) Excluding hydrofluoric acid and its derivatives



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### Dimensional Specifications

12"x24" Natural Linear Size (mm)	
Caliber	Avg. Size
G	294.0 x 592.0
H	295.2 x 594.4
I	296.4 x 596.8
Q	297.6 x 599.2
T	298.8 x 601.6
U	300.0 x 604.0
V	301.2 x 606.4
W	302.4 x 608.8
Y	303.6 x 611.2

### Recommendations

#### Grout Joint Recommendations

Per TCNA Handbook, the minimum required joint width for ceramic tile and natural stone is 1/16th". Setting ceramic or stone without a grout joint of a least 1/16th", often referred to as a butt joint, does not provide sufficient accommodation for dynamic building movement, differential thermal expansion, or allowable variation in fabrication or manufacturing. Florida Tile recommends a minimum 3/16th grout joint for all ceramic tile and natural stone installations and 1/8th grout joint for rectified tiles.

#### Offset Installations (Brick Patterns)

The TCNA Handbook recommends no more than a 33% offset and a wider grout joint for offset installations of tile larger than 15" on the longest side. This is because all tiles are higher in the middle than at the edges. When the highest point (middle) of one tile is next to the lowest point (edge) of the tile next to it, unacceptable lippage can result. Florida Tile is aware that many installers wish to use tiles (especially 12"x24" tiles) in brick patterns with a 50% offset. Typically, our tiles are flatter than those of our competitors and better suited for this type of application. Florida Tile encourages installers to follow the TCNA Handbook recommendations. If an offset greater than 33% is specified, specifier and owner must approve mock-up and lippage. TCNA handbook recommends a minimum 1/8th grout joint for rectified tiles and a minimum 3/16th grout joint for calibrated tiles. Florida Tile recommends a wider (3/16" minimum) grout joint for this type of installation and it is important to avoid 'wash' lighting that is set close to the tiled surface which can aggravate the appearance of lippage due to shadows. Care must be taken to follow the subfloor flatness and installation guidelines in the TCNA Handbook for a successful installation.

#### Wet Area Applications

Due to the nature of the material, ceramic and porcelain tile will absorb water. The structure of the tile determines the amount of water the material will absorb. Thus, proper waterproofing methods and drainage systems need to be in place for a successful wet area installation. If water penetrates behind shower tiles, it soaks into the body and changes the color of the tile. This is common for ceramic tile due to its high absorption rate. Water penetration could be the result of a leak in the shower, damaged corner joints, leaking taps, or missing grout (grout not being flushed with the surface of the tile). A leak in the shower is a serious problem and can quickly get worse. Once repaired, the tiles will dry naturally, and the tile color will return to normal.



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