

Mosa.

Ultragres porcelain tiles, unglazed

Product description

Unglazed, dry-pressed, single-fired, fully vitrified porcelain tiles, manufactured with the Ultragres procedure, in accordance with EN 14411, annex G, type B1a and in compliance with ANSI A137.1 class P1*, with a water absorption of < 0.1 % on the surface and ≤ 0.3 % on the body. Dimensionally stable tiles in sizes ranging from 4 x 4 to 24 x 48 inch, with various surface designs and structures, depending on the series and version. Cradle to Cradle® (C2C) Silver certified; designed for the technosphere and safe for the biosphere.

Product advantages

Natural appearance; each tile is a unique product. Extensive range of sizes, including planks. Smooth and textured versions with appropriate slip resistance properties for each application. Suitable for use with underfloor heating. Durable porcelain tile for indoors and outdoors. For domestic, utility and commercial use. Also suitable for wall and facade cladding. Very hard-wearing. High resistant to chemicals. Easy maintenance. Frost resistant. Dimensionally consistent. Modular. An extensive range of accessories, including skirtings, stair and recess shower tiles, that fit with the modular range of wall and floor tiles.

Stair-treads and skirtings

Stair-treads (TVG) and skirtings (BP) have an edge finish that has been applied after production. This finishing consists of a ceramic glaze in a similar color to the surface that has been fired at high temperature to form an integral entity with the tile. Light colored glazes may not always be able to fully cover the darker body color.

Benefits of the Ultragres procedure

Ultragres tiles are the result of over 130 years of experience, knowledge, expertise, and passion for ceramics. The superior technical properties of the tiles allow them to perform well in terms of dimensional stability, flatness, breaking strength, bending strength, and resistance to serious wear and tear. Mosa's standards of tile performance go beyond the current international standards. Our tiles are produced sustainably and have a contemporary appearance. Their authentic character will remain intact throughout their service life, guaranteeing quality and aesthetics. These qualities make Ultragres tiles a reliable choice in terms of installation, sustainability, and design.

Sustainability and Cradle to Cradle

Mosa Ultragres unglazed porcelain tiles are Cradle to Cradle (C2C) Silver certified. The composition of Mosa tiles is pure, clean, and suitable for inclusion in the cradle-to-cradle cycle. This means that they do not release any hazardous substances during or after their long service life. Mosa tiles are produced in our own factories in Maastricht (NL). We utilise renewable energy sources and local materials whenever possible, resulting in a favourable CO2 balance. Specific data about Mosa tiles are included in the National Environmental Database for calculation of the material-related environmental performance in conformance with the Dutch Building Decree. An Environmental Product Declaration (EPD type III) and MRPI sheet (containing environmentally-related product information) are available upon request via info@mosa.com. Mosa tiles are ideally suited for use in sustainable buildings and contribute to the award of hallmarks or points from organisations such as LEED and BREEAM. For current information see www.mosa.com.

NEN-EN-ISO 14001

Since 2007, Mosa have organized their environmental management system according to the international ISO 14001 standard.

Recycling

Mosa unglazed porcelain tiles contain up to 45 % recycled material, depending on product type.

Soil Quality Decree

Mosa Ultragres unglazed porcelain tiles are NL-BSB certified in compliance with the Dutch Soil Quality Decree (certificate number IKB1578). This means that Mosa Ultragres tiles meet or exceed all the environmental requirements of the Dutch assessment guidelines BRL52230 and are suitable for outdoor use.

Our limited warranty

Royal Mosa warrants that its first choice porcelain tiles are manufactured to specifically mentioned ASTM and ISO standards and meet or exceed the requirements of those standards unless specifically mentioned and excluding other standards.

Please consult Royal Mosa's sales conditions for complete product warranty details.

* Specifications not in exact accordance with ANSI A137.1 are tagged and EN 14411 requirements mentioned.

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Walking safety

Mosa Ultragres unglazed porcelain tiles are tested using a BOT 3000 testing device according to ANSI A137.1, section 9.6, also known as the DCOF AcuTest. We offer different surface finishes with appropriate slip resistance values for a vast range of applications. For test reports please contact the Customer Service department at info@mosa.com or telephone number +1 212 729 6332. See also our technical information sheet 'Walking safety' for further information and slip ratings.

Technical data

Properties in accordance with standard ANSI A137.1 and Mosa standard^A.

The Mosa standards mentioned below cover the following production sizes:

- calibrated (non-rectified): 4 x 4, 6 x 6 VV/RM, 6 x 12, 8 x 8, and 12 x 12 inch;

- rectified: 6 x 6 V/RL, 12 x 24, 15 x 30, 18 x 18, 24 x 24, 24 x 48, 30 x 30, 36 x 36, and 40 x 40 inch^B.

Property	ASTM test	Requirement ANSI A137.1 P1	Standard Mosa
Facial dimensions (range)	C 499	calibrated: +/- 0.5 % or +/- 0.08" rectified: +/- 0.25 % or +/- 0.03"	≤ 4": +/- 0.5 % other calibrated: +/- 0.3 % rectified: +/- 0.012" ^C
Actual thickness (range) ^D	C 499	≤ 0.04"	≤ 0.02"
Warpage edge	C 485	calibrated: +/- 0.5 % or +/- 0.07" rectified: +/- 0.4 % or +/- 0.05" ^E	≤ 4": max. +/- 0.015" > 4" < x ≤ 8": max. +/- 0.025" > 8" < x ≤ 12": max. +/- 0.03" > 12" < x ≤ 24": max. +/- 0.04" > 24": max. -0.05" / +0.07"
Warpage diagonal	C 485	calibrated: +/- 0.5 % or +/- 0.08" rectified: +/- 0.4 % or +/- 0.07"	4": max. -0.015" / +0.025" 6": max. +/- 0.03" other calibrated: max. +/- 0.05" 12 x 24 / 15 x 30 / 18 x 18 / 24 x 24 / 30 x 30 inch: max. +/- 0.06" other rectified: max. +/- 0.07"
Wedging	C 502	calibrated: +/- 0.5 % or +/- 0.08" rectified: +/- 0.25 % or +/- 0.03"	calibrated: +/- 0.5 % rectified: +/- 0.02"
Water absorption	C 373	≤ 0.5 %	surface: < 0.1 % body: ≤ 0.3 %
Breaking strength ^F	C 648	≥ 275 lbs (average) ≥ 250 lbs (individual)	thickness < 0.4": > 400 lbs thickness ≥ 0.4": > 700 lbs
Bond strength	C 482	≥ 50 psi	> 200 psi
Modulus of rupture	C 674	not required	> 6000 psi
Deep abrasion	C 1243	≤ 175 mm ³ (or ≤ 0.011 in ³)	< 150 mm ³ (or < 0.01 in ³)

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Mohs hardness			≥ 7
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Thermal shock	C 484	pass	pass
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Freeze-thaw cycle	C 1026	as reported	pass
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Property	ASTM test	Requirements ANSI A137.1 P1	Standard Mosa
Chemical resistance	C 650	as reported	class A
Coefficient of friction	C 1028	withdrawn; replaced by DCOF	
Dynamic coefficient of friction	DCOF AcuTest	≥ 0.42	LS/RL/V/VV/S RM/RQ/MR/LVS/TS/CR
Fire reaction	CWT ^G		A1 _{FL}
Cradle to Cradle®			Gold

^A Assuming there is no change to the surface of the tiles. A treatment applied to Mosa tiles by third parties after installation, such as a chemical or mechanical anti slip treatment, can have a negative impact on the appearance and physical properties of the tiles. Mosa does not accept any liability for this.

^B Dimensionality (C 499) and warpage (C 485) of all (specially produced) different and derivative sizes and products comply at least to the requirements stipulated in ANSI A137.1, class P1 (Porcelain Tile).

^C Including Terra Greys and Terra Maestricht 6" x 6" rectified (V and RL).

^D Actual thickness depends on size and series.

^E +/- 1.3 mm for sizes ≤ 24" x 24" and +/- 1.8 mm for sizes > 24" x 24" (ANSI A137.1).

^F The breaking strength requirements (C 648) do not apply to oblong sizes.

^G According to EN 14411.

Sizes

Modular sizes versus actual sizes

The production is based on Mosa's modular system. The nominal size is expressed in centimetres, while the actual size is expressed in millimetres. A nominal size of 6 x 6 inch is equivalent to an actual size of 5 3/4 x 5 3/4 inch. The tiles are intended for installation with an 1/8 to 3/16 inch joint width.

Calibrated (non-rectified) tiles may have other manufacturing sizes (= calibres), within the tolerances of the Mosa standard.

The calibre code is shown on the tile packaging. Mosa pallets always contain tiles of a single calibre. Always use tiles of the same calibre when working on a single large surface.

Rectified

All tiles larger than 12 x 12 inch have rectified edges and can be installed with an 1/16 to 1/8 inch joint width.

Shades and design

Tiles are a natural product. Color differences may occur. Mosa sorts products by shade which is indicated on the box. When applying plank patterns consisting of different sizes, different shades may be supplied. The surface design of Mosa Ultragres unglazed porcelain tiles is the result of a randomized scattering process; every tile is unique. Design and shade of supplied tiles may deviate from shown samples.

Article coding on the packaging

The following information can be derived from the coding on the packaging:

Sample article coding on packaging: **216 V 060060 1 77 AA 0 X03**

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216	color	
V	surface indication	V/VV/S/MR/RM/CR/LS/RL/RQ/TS/WS
060060	nominal size 60 x 60 cm (24 x 24 inch)	
1	grade	Mosa only packages and delivers grade 1 tiles.
77	calibre designation	Manufacturing size 597 x 597 mm (23.50 x 23.50 inch), modular with an 1/8 inch joint width.
AA	shade designation	
0	thickness designation	Standard 0. If a standard article is to be produced in a non-standard thickness, a different thickness designation will be shown here.
X03	packaging code	Indicates the type of box and the number of pieces per box.

HACCP

Various series include matching, modular thin coved bases, and skirtings with internal and external corners for rounded transitions between tiled walls and floors. The use of thin coved skirting is particularly recommended in areas subject to HACCP requirements, such as:

- bakeries
- fruit and vegetable processing areas
- hotels, restaurants, and cafés
- supermarkets
- slaughterhouses and butcher shops
- fish processing and retailing areas
- food preparation areas
- dairy production and processing areas
- breweries
- changing and shower rooms

The Global Collection and Softline series also include an extensive range of slip resistant products and special solutions for curved wall/floor transitions and corners.

UV resistance

Mosa Ultragres unglazed porcelain tiles do not alter under influence of UV radiation. Tested according to DIN 51094; test report available. For further information please contact info@mosa.com or telephone number +31 (0)43 368 92 29.

Light reflectance value

The light reflectance value (LRV) is determined according to ASTM C609-07 and is the ratio of the total quantity of light reflected from a surface to the total quantity of incident light on the surface. The LRV can be used to determine the contrast between different colors. LRV may be useful when preparing a lighting plan or selecting colors. See the Mosa Product Details book or www.mosa.com for the indicative LRV for each color.

Solar Reflectance Index

The Solar Reflectance Index is measured in accordance with ASTM E1980 and indicates the surface's ability to stay cool in the sun by reflecting solar radiation and emitting thermal radiation. For further information please contact the Customer Service department at info@mosa.com or telephone number +31 (0)43 368 92 29.

Installation recommendations

Mosa porcelain tiles can be installed with any conventional installation method, using any mortars, adhesives, and grout compounds suitable for fully vitrified porcelain tiles and in compliance with ANSI 108 and 118 or ISO 13007. For detailed installation recommendations see www.mosa.com.

Due to the random scattering pattern during the production process, the tile surface has a directional pattern. Please keep this in mind when placing the tiles.

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Planks

Planks from the Mosa Ultragres unglazed porcelain tile collection are modular and can be used to create a continuous pattern with tiles of sizes 24 x 24, 36 x 36, and 24 x 48 inch. For use on walls and floors. Due to the flatness tolerances of the substrate and the planks, slight unevenness in the tiled wall cannot be ruled out when tiles are installed in a brickwork pattern. Any resulting shadows will be accentuated by raking light (see also TCNA Handbook for recommendations).

Maintenance

See www.mosa.com for the latest maintenance recommendations.

General questions

Customer Service: info@mosa.com; Tel.: +1 212 729 6332.

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Like any material, Royal Mosa's porcelain tiles can become slippery when wet. Care should be taken to keep the surface dry at all times. Our tiles should be installed in accordance with the current application guides of the Tile Council of America and/or American National Standards Institute guides and standards. Errors and omissions excepted. This technical product sheet contains information about Mosa products, properties and applications, and should not be construed as a guarantee based on the provided recommendations. Mosa accepts no liability based on the content of this document. For information concerning warranties and liability please refer to our General Terms and Conditions of Sale. No rights can be derived from the contents of this technical product sheet. We take no responsibility for typographical errors. This technical product sheet replaces all previous versions. For the most actual version see www.mosa.com.