

MasterTile® FLX 441

Two-component high performance fast-setting and hydrating cementitious adhesive for ceramic and critical natural stone coverings

DESCRIPTION

MasterTile FLX 441 is a cement based, polymer modified, highly stable, high performance, flexible adhesive used in adhesion of natural stones, granites, marbles and glass mosaics, and can also be used to bond ceramics.

TYPICAL APPLICATIONS

- For indoor and outdoor use
- For floors
- To lay natural stone tiles
- To level uneven substrates prior to laying tiles.
- On stairs of villas, hotels, in living areas, on heated screeds, balconies and terraces, in halls, rooms and corridors of industrial buildings, retail outlets, markets, institutional, service and administration buildings and airports
- Can also be used for ceramics

ADVANTAGES

- Plastic, workable bedding mortar, the medium-bed mortar is spread with only a notched trowel
- Flexible, compensates fluctuations in temperature and expansion in the substrate
- Good adhesion without pre-wetting or priming on concrete, sand-cement screed, and render
- Low shrinkage, no tensions caused by shrinkage between **MasterTile FLX 441** and the natural stone tile
- Resistant to frost and permanent exposure to wetness, multi-purpose use indoors and out, on walls and floors
- Quick setting, reduces penetration of moisture into the material during the installation thus preventing efflorescence
- Rapid curing, walkable and groutable after approx. 6 hours, able to bear weight after approx. 1 day
- No staining from the adhesive bed with white marble if the installation is carried out in the buttering-floating method

PACKAGING AND COLORS

MasterTile FLX 441 is supplied in 30.5 kg units (PTA 25kg and PTB 5.5kg) and available in White and Grey colors.

TYPICAL PROPERTIES*

Mixed density @ 25°C	Approx. 1.7 kg/L
pH-value	Approx. 12
Flexural strength BS EN 196 Part 1	1 day >2.0 N/mm ² 7 days >3.0 N/mm ² 28 days >6.0 N/mm ²
Compressive strength BS EN 196 Part 1	1 day >10 N/mm ² 7 days >20 N/mm ² 28 days >25 N/mm ²
Pot life	45 min
Setting time	Initial 120 min Final 195 min

Conforms to and exceeds the requirements of EN12004 as a C2FTS1 Adhesive Type

APPLICATION

Required notch size	consumption per m ² approx.	sufficient for approx.
- 4mm	2.7kg	11.2m ²
- 6mm	4.1kg	7.5m ²
- 8mm	5.5kg	5.6m ²
-10mm	6.8kg	4.5m ²
Gauging liquid for - 25kg bag	approx. 5.5 L	
Thickness of adhesive bed	5 to 20 mm	
Working temperature	+5°C to +40°C (substrate temperature)	
Slake time	approx. 3 minutes	
Open time*	approx. 20 minutes	
Working time*	approx. 30 minutes	
Curing times*		
- walkable after	approx. 6 hours	
- groutable after	approx. 6 hours	
- able to bear weight after	approx. 24 hours	
Temperature resistance	-20°C to +80°C	

* At +23°C and 50% relative humidity. Higher temperatures reduce, lower temperatures increase the times given.

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APPLICATION GUIDELINES

- Add liquid **MasterTile FLX 441** Part B into a clean mixing container. Slowly add **MasterTile FLX 441** Part A (powder) and mix with a suitable paddle attached to an electric drill until a plastic, lumpfree mortar is achieved.
- Allow a slake time of approx. 3 minutes and re-mix briefly.

PREPARATION OF SUBSTRATE

Minimum age of the substrate:

- Cementitious screed: 28 days or sooner if polymer modified screed is used
- Concrete: >28 days

The substrate must be dry, free of oil and dust and able to bear weight. Prime very absorbent cementitious substrates with **MasterTile P 302**, diluted 1:1 with water. Prime ground anhydrite and/or gypsum-based floated screeds and poured asphalt screeds indoors with undiluted **MasterTile P 302**. Allow primer to dry. Cementitious screeds must not have a residual moisture content of more than 4%, anhydrite screeds not more than 0.5% (measured with an electronic moisture meter).

INSTALLATION OF NATURAL STONE TILES

- *Medium-bed method*
Apply **MasterTile FLX 441** onto the substrate section by section to achieve a scratch coat. Spread as much mortar as can be covered with natural stones within the open time using a medium-bed trowel or any other suitable notched trowel which enables almost full bedding. Check the open time with your fingertip. Position tiles with a twist and slide motion to obtain almost full bedding.
- *Bedding method*
Apply **MasterTile FLX 441** to the required thickness with a medium-bed or flat trowel both to the substrate and the reverse side of the tile. Press down and align the natural stone tile and wedge if necessary. Apply only as much mortar as can be covered with tiles within the open time. Check the open time with your fingertip. The application of **MasterTile FLX 441** to the reverse side of

the tile prevents staining from the adhesive bed and enables an almost void free adhesive bed.

Grouting

- *Joint width from 1 to 8 mm*
Use one of the Master Builders Solutions epoxy or cementitious grouts
- *Elastic joints*
Seal corner joints (floor/wall, wall/wall, wall/soffit) and connection joints (fixtures/tiling, wood/tiling) with a suitable elastomeric sealant from the **MasterSeal** range



For void-free laying always apply a layer of mortar to the reverse side of the tile.

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NOTE

- Do not apply **MasterTile FLX 441** at substrate temperatures below +5°C and above +40°C or under exposure to extreme heat and strong winds.
- The open time reduces with absorbent substrates (recommendation: priming with **MasterTile P 302**, diluted 1:1 with water).
- In case of high layer thicknesses, the amount of **MasterTile FLX 441** Part B can be reduced, however, resulting in decreasing the open time.
- When laying natural stones on substrates which set through hydration and which have not yet reached the specified minimum age and/or the specified residual moisture level please consider the use of **MasterTile WP 680** membrane.
- Never add additional liquid **MasterTile FLX 441** (Part B) or dry powder to a **MasterTile FLX 441** mix which has already begun to set. Apply **MasterTile FLX 441** within approx. 30 minutes (at +40°C) after mixing.
- The technical data sheets for the respective grouts and/or sealants should be followed when grouting natural stones.
- Clean tools and mixing containers with water immediately after use; once the product has cured it can only be removed by mechanical means.

CLEANING

All tools may be cleaned with plenty of water before the adhesive sets. After setting, cleaning becomes very difficult, but can usually be helped by solvents such as white spirit or similar.

COVERAGE / YIELD

Approx. 1.7 kg of mixed mortar (wet) per m² and mm adhesive bed thickness.

STORAGE AND SHELF LIFE

MasterTile FLX 441 should be stored in cool and protected from frost, no permanent storage over +40°C. The shelf life is 6 months when stored as above.

HEALTH AND SAFETY

MasterTile FLX 441 contains cement. Contact with moisture or gauging water sets off an alkaline reaction which may cause skin irritation and/or caustic burns to mucous membranes (e.g. eyes). Risk of serious damage to eyes, therefore, avoid contact with eyes and prolonged contact with skin. In case of contact with eyes immediately rinse with water and consult a doctor. In case of contact with skin immediately change contaminated clothing and wash skin with plenty of soap and water. Wear suitable protective gloves (e.g. cotton gloves soaked in nitrile). If ingested seek prompt medical attention and show packaging or this technical data sheet. Keep out of reach of children.

Material base	Cement mortar mix with additives. Does not contain asbestos or other mineral fibres. No injurious silica dust during the application.
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For further information refer to the Material Safety Data Sheet.

* Properties listed are based on laboratory controlled tests.

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

NOTE

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