

FMörtel® 20 FC (MasterCrete™ TIL FC 20)

Cement-Based, Easily Spreading, Fast-Setting, Flexible Adhesive for Natural Stone, Porcelain, Granite, and Marble

Material Description

FMörtel® 20 FC, is a cement-based, easy-to-apply, rapid-setting, highly stable and high-performance flexible adhesive used for bonding ceramics, porcelain, granite, marble, and natural stones.

Complies with the EN 12004 -C2F class.

C2: Cement-based adhesive with improved additional properties

F: Fast-setting cement-based adhesive

Areas of Application

- Indoor and outdoor areas for horizontal applications only
- For the application of ceramics, porcelain tiles, large-sized flagstones, cotto, floor bricks, and natural stone slabs on smooth or uneven concrete surfaces

- In areas requiring fast application
- In underfloor heating systems and industrial floors
- In balconies, terraces, and wet areas
- In renovation and repair works, for tile-on-tile applications

Characteristics and Benefits

- Easy to prepare and apply.
- Rapid setting.
- Shortens application time, as there is no need to apply adhesive mortar on the back of the tiles.
- Thanks to its flowable consistency, **FMörtel® 20 FC** can be quickly and easily spread on the surface with a notched trowel.
- High adhesion strength.
- Resistant to freeze-thaw cycles.
- Resistant to stresses and vibrations caused by temperature variations.

Technical Properties

Structure of the Material	Mineral fillers, synthetic additives, powder polymers and special cement.	
Color	Grey	
Adhesion Strength	$\geq 1,00 \text{ N/mm}^2$	
Application Thickness	Min. 4 mm - Max. 15 mm	
Time to Grouting	3 hours	
Application Substrate Temperature	+5°C to +25°C	WK
Service Temperature	-30°C to +80°C	
Slaking Time	3 minutes	
Working Time	50 minutes	
Open Time	10 minutes	
Water Retention	98%	
Walkable After	3 hours	
Open to Full Traffic After	24 hours	

The above values are given for +23 °C and 50% relative humidity. Higher temperatures shorten these times, while lower temperatures extend them.

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Processing Method

(A) Preparation of Substrate

The substrate must be sound, dry, load-bearing, dust-free, clean, and level. The surface must be free from all kinds of oil, grease, rust, and paraffin traces that can weaken adherence and no loose particles must be present. Uneven areas with 5 to 20 mm depth must be repaired with **MasterCrete™ S88 C** repair mortars two days before the application. If the substrate temperature exceeds +25°C, the surface should be lightly moistened.

(B) Mixing

The required amount of water is poured into a clean mixing container using a measuring cup. **FMörtel® 20 FC** is slowly added and mixed into the water with a 400-600 RPM mixer for 3-5 minutes until a homogeneous and lump-free mixture is obtained. After resting for approximately 3–5 minutes and mixing again for 30 seconds, the material is ready for use.

Mixing Ratios

FMörtel® 20 FC	Amount of Mixture Water	Density of Mixture
For 1 kg powder	~0.20 / 0.23 L	~1.90 kg/L
For 20 kg bag	~4.00 / 4.60 L	

(C) Processing

FMörtel® 20 FC is poured onto the surface from the mixing container and spread. Within the 10-minute open time, it is applied with the serrated side of the trowel in a single direction to obtain a uniform thickness. When applying ceramics or granites, they are floated on the mortar to ensure full contact with the adhesive. A joint gap recommended for the selected ceramic or granite size is left and the application is completed. The selected joint gaps must be filled with **MBT Tech** tile grouts, and grouting can be started approximately 3 hours after the ceramic or granite application.

Recommended Notched Trowel Sizes

Tile Dimensions	Notched Trowel Size	Mortar Bed Thickness
Up to 30 cm x 30 cm	8 mm	~ 3 mm
Up to 60 cm x 60 cm	10 mm	~ 4 mm
Over 100 cm x 100 cm	15 mm	~ 7.50 mm

Recommended Joint Width

Tile Dimensions	Joint Width
Up to 30 cm x 30 cm	4 mm
Up to 60 cm x 60 cm	6 mm
Over 100 cm x 100 cm	6-8 mm

Consumption

Approx. 1.58 kg/m² per 1 mm thickness

FMörtel® 20 FC	Notched Trowel Size and Consumption (kg/m ²)	
	8 mm	10 mm
20 kg	6.33	7.92

Adhesive Usability Test (Open Time)

Press a finger onto the applied adhesive surface. If adhesive sticks to the finger, tiling can be continued. If the finger remains clean, the open time of the adhesive has expired. In this case, the adhesive must be removed from the surface and replaced with fresh material.

Points to Consider

- If the ambient or substrate temperature is below +5°C or above +25°C during **FMörtel® 20 FC** application, wait for suitable conditions. Also, avoid application in very hot, rainy, or windy weather.
- FMörtel® 20 FC** must be applied at a thickness between 4 mm and 15 mm.

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- Tiles with high water absorption should be soaked in water before application.
- In exterior applications, the tiled surface must be protected from excessive sunlight, wind, frost, and rain for the first 24 hours.
- Under no circumstances should water or new material be added to a **FMörtel® 20 FC** mixture that has started to set.

Cleaning of Tools

All the tools and equipment must be cleaned by water after the application. After **FMörtel® 20 FC** is hardened, it can only be removed from the surface mechanically.

Packaging

20 kg polyethylene-reinforced kraft bags

Shelf Life

6 months after the production date under appropriate storing conditions. Opened packages have to be stored by tightly sealing the bag, and must be used in one week.

Storage

Must be stored in unopened original packing, and in cool and dry environment protected from freezing. In short-term storing, maximum 3 pallets can be stowed on top of each other and delivery has to be according to first in first out system. In long-term storing, the pallets must not be stowed on top of each other.

Health and Safety

It is dangerous to approach the application sites. During the application, a protective apparel, protective gloves, goggles and masks which comply with the Occupational Health and Safety Rules should be used. Due to the irritation effect of the uncured materials, the mixture should not come into contact with skin and eyes; in case of a contact, the affected area should be washed with plenty of water and soap; in case of swallowing, a physician should be consulted immediately. No food or beverages should be brought to the application area. The product should be stored and kept out of reach of children. For detailed information please consult the Material Safety Data Sheet.

Disclaimer

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is only responsible for the quality of the product **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

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