

Product Information

DolitFC

KI.FU.006 | 03/07/2024



CRS
Chemical Resistant Systems

PRODUCT GROUP

Mortar - Synthetic resin

BINDER BASE

Furan resin, aldehyde-free

PROPERTIES / APPLICATION

Laying and jointing mortar based on a modified furan resin with hydrofluoric acid resistant fillers for easy laying and jointing of acid-resistant ceramic tiles, bricks or carbon bricks.

Due to its good chemical resistance, especially to solvents and basic chemicals, as well as to hydrofluoric acid, the mortar is used for lining chemical apparatus and process vessels in the chemical industry.

- Temperature resistance
 - Up to 180 °C
 - The temperature resistance is basically dependent on the individual chemical stress.
- Very good chemical resistance to a wide range of media.
 - Various inorganic and organic acids and alkalis.
 - Greases and oils
 - Fuels, solvents and various hydrocarbons.
 - Hydrofluoric acid
- Excellent adhesion to ceramic tiles, bricks or carbon bricks.
- Electrically conductive (see Testing the electrostatic dissipation capability [► 4]).
- Particularly economical use due to favourable resin/filler ratio or high filler content of the mortar.
- Can be applied with a joint injector.

SYSTEM DESIGN

Dolit FC Mortar mass



PHYSICAL DATA

Physical property	DIN	ASTM	Value	Unit
Density	DIN EN ISO 1183-1		2.2	g/cm ³
Abrasion resistance	DIN 52108		11	cm ³ /50 cm ²
Flexural strength ^[1]		ASTM C 580	20	MPa
Compressive strength ^[1]		ASTM C 579	85	MPa
Tensile strength ^[1]		ASTM C 307	10	MPa
Flexural modulus of elasticity ^[1]		ASTM C 580	5400	MPa
Adhesive strength to ceramic tiles	DIN EN ISO 4624		> 2.0	MPa
Therm. Coefficient of linear expansion	DIN 51045		1.9 x 10 ⁻⁵	1/K
Thermal conductivity	ISO DIN 22007-2		2.1	W/mK
Ground dissipation resistance	DIN EN 14879-6 At >70% relative humidity		≤ 10 ⁶	Ω

PRECONDITIONS

The temperatures for the substrate, ambient air and Dolit materials must be between 10 °C and 30 °C during application. The optimum processing temperature is 20 °C. Higher and lower temperatures affect the working time and consistency of the composition. Consumption and application performance may change as a result.

During application, the substrate must be kept absolutely dry. No moisture (condensate, mist, etc.) may get onto the surfaces to be protected.

Unevenness must already be levelled out in the substrate.

Distance to dew point has to be at least 3 K, at a relative humidity of above 70 % at least 5 K.

The construction site must be protected from draught and direct sunlight.

Dolit mortar systems can be used for the full-joint or hollow-joint installation of tiles and bricks. Normally, the build-up is carried out on one of the coating or lining systems from the CRS programme under the conditions and system build-ups described there (e.g. execution of an adhesive layer). If such a sealing layer is not used, at least a suitable primer with appropriate scattering must be provided.

If tiles laid in a hollow joint are to be jointed with a Dolit mortar material, the bedding joint must be hardened and dry again. The open joint should have a rectangular cross-section, be at least 15 mm deep and 4 - 8 mm wide. The side surfaces of the tiles must be free of mortar material and the joint must be clean.

^[1] Mean value, determined on annealed samples.

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DELIVERY FORM / BEST BEFORE DATE

Component	Item no.	Quantity	Package	Months
Dolit-FQ-Solution	5233009001	25 kg	Hobbock	24
Dolit-FC-Powder	5233032001	25 kg	Bag	24

- All components must be stored and transported in a dry and frost-free place.
- The minimum shelf life applies to a storage temperature of 20 °C. Higher temperatures shorten, lower temperatures extend the minimum shelf life.

Safety notice

- For handling, storage and transport, observe the relevant safety data sheets!

GISCODE

Product	GISCODE
Dolit FC Mortar mass	SB-F10

WORKING EQUIPMENT

NOTE!

The materials to be processed can have an aggressive effect on mixing and processing tools due to the solvents, acidic, alkaline or abrasive components they contain. Therefore, please use only suitable tools for mixing and processing.

Mortar mixer	Joint board (rubber chip)	Drilling machine
Trowel	Measuring cup	Anchor stirrer
Joint iron	Scale	
Joint injector	Mixing vessel	

MIXING RATIO / CONSUMPTION

DOLIT FC MORTAR MASS

Component	kg/litre	Part by weight	kg/batch	Litres/batch
Dolit-FQ-Solution	0.375	1	1.150	1.000
Dolit-FC-Powder	1.825	4.87	5.600	4.700
Total	2.200	5.87	6.750	

Volume per batch	≈ 3.1 l Mortar mass
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Mortar required for full-length installation (bedding joint 5 mm, butt joint 7 mm)	
Split tiles 240 x 115 x 20 mm	≈ 7.5 l 16.5 kg/m ²
Split tiles 240 x 115 x 40 mm	≈ 9.5 l 20.9 kg/m ²
Bricks 240 x 115 x 65 mm	≈ 11.5 l 25.3 kg/m ²
Bricks 240 x 115 x 80 mm	≈ 13.0 l 28.6 kg/m ²
Bed joint thickness	4 – 7 mm
Joint width	4 – 8 mm
Depth of joints by hollow joint installation	at least 15 mm

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MIXING / APPLICATION

Processing may only be started when the application requirements are met and can be maintained during the entire processing and curing.

MIXING SEQUENCE

- At high ambient temperatures, mix smaller quantities of mortar mass to avoid a strong exothermic reaction of the mixture.
- Stir the solution well with the anchor stirrer (300 - 500 rpm) before use or partial withdrawal. Move the stirrer past the vessel wall and bottom.
- Liquid components are measured or weighed and transferred to a mixing vessel.
- Solids are measured or weighed out individually, added to the solution in portions and mixed in carefully with an anchor stirrer (300 - 500 rpm) until a lump-free mixture is obtained.
- During the mixing process, move the stirrer past the vessel wall and bottom several times.
- Smaller quantities can be mixed by hand.
- Do not use the mortar mass after the working time has expired.

APPLICATION

- The mortar mass can be used for the full-joint or hollow-joint installation of tiles and bricks.
- Bedding joint is applied to the substrate in a thickness of 4 - 7 mm.
- For full-joint application, apply the mortar mass to two side edges of the tiles or bricks. Then place the tile or brick in position.
- Remove the mortar bead with the trowel and smooth out the joint.
- With hollow joint installation, the butt joint remains free and is filled later.
- To obtain visually flawless surfaces after jointing, the use of Dolit Protective Varnish A, hard wax or clinker oil is recommended, depending on the tiles used. Check the use on a test area in advance.
- Special care should be taken to ensure that the work is free of voids.
- The subsequent jointing can be done with a joint injector, joint iron or joint board.
- To compact the joint, excess material is pressed into the joint with the joint iron. Remaining material is removed with the trowel.

POT LIFE

- At 20 °C the pot life is approx. 30 - 50 min.
- The pot life depends on the temperature.
- Higher temperatures shorten it, lower temperatures prolong it.

WAIT- / CURING TIME

- Waiting time until walkability (at 20 °C) at least 5 hours.
- Curing time until complete chemical and mechanical resistance (at 20 °C) at least 5 days.

CLEANING

Tools that are soiled with uncured materials can be cleaned with Dolit-Universal-Cleaner. Clean only in well ventilated areas and observe safety measures.

TESTING THE ELECTROSTATIC DISSIPATION CAPABILITY

Tile flooring needs to be cleaned before the test. There must be no insulating layers. The test takes place at the construction site and is carried out at the earliest 8 days after installation.

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The measurement of the ground dissipation resistance R_E for testing the dissipation capability is carried out in accordance with DIN EN 14879-6 and is performed using a commercially available resistance meter up to 10^8 ohms with 100 volts DC as the measuring voltage. A circular electrode with a diameter of 50 mm is used as the measuring electrode. As a contact mediator, a 50 mm diameter flow paper slightly moistened with tap water is placed on the surface of the tile. During the measurement, a force of approx. 10 N is applied to the base.

For tile linings with non-electrically conductive ceramic tiles, measurements are taken in the area of the joint. Particular care must be taken to ensure that there is uninterrupted contact between the electrode, contact mediator and joint during the measurement.

For non-conductive tiles, the panel size must not exceed the following dimensions to ensure dissipation capability across the joint material:

- For rectangular tiles 115 x 240 mm
- For square tiles 150 mm x 150 mm

SAFETY / DISPOSAL

- Ensure sufficient ventilation, especially when working in closed rooms, pits or containers.
- Observe fire and smoking ban.
- Observe safety data sheets, hazard statements and safety advice on the containers.
- Wear prescribed personal protective equipment. Avoid skin contact with the materials.
- Clean and care for hands with skin protection soap and ointment. Do not use solvents.
- Wear a dust mask during grinding work, e.g. repairs.
- Follow operating instructions according to §14 GefahrstoffV and Technical Rules for Hazardous Substances TRGS 507.
- Comply with the accident prevention regulations of the employers' liability insurance associations.
- Avoid direct contact of the materials with the flame, especially when welding, watch out for welding beads.
- Preferably consume residual quantities.
- Do not pour residues down the sink or into the dustbin.
- Collect residues for disposal separately in durable, sealable and labelled containers.

All information contained in this Product Information is based on the present state of our knowledge and practical experience. All data are approximate values for guidance only. A legally binding warranty of certain characteristics or the suitability for a certain purpose of use cannot be derived from this.

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This issue replaces all previous versions.