

Product Information

DolitVEC

KI.VE.001 | 09/02/2022



PRODUCT GROUP

Mortar - Synthetic resin

BINDER BASE

Epoxy-Novolac-Vinylester

PROPERTIES / APPLICATION

Laying and jointing mortar based on a vinylester resin and a carbonaceous filler for easy laying and jointing of acid-resistant ceramic tiles, bricks or carbon bricks.

Dolit VEC is used for the lining of apparatus and process vessels or for the tiling in industrial plants, chemical warehouses and production areas where particularly comprehensive and universal chemical resistance is required.

- Temperature resistance
 - Up to 120°C
 - The temperature resistance is basically dependent on the individual chemical stress.
- Very good chemical resistance to acids, alkalis, solvents and oxydising media.
- Hydrofluoric acid resistant
- Can be used inside buildings or outdoors.
- Good adhesion to ceramic tiles, bricks or carbon bricks.
- Electrically conductive (see **Testing the electrostatic discharge capacity** ► 5)).

The **Dolit VEC** is compatible with the different systems within Dolit VEL modular kit and can be used, for example, on the primers, scraper coat or laminates described there.

Accelerator and hardener are identical. Only the solutions may not be exchanged between the systems.

SYSTEM DESIGN

Dolit VEC mortar mass ► 3]

PHYSICAL DATA

Physical property	DIN	ASTM	Value	Unit
Density	DIN EN ISO 1183-1	ASTM D 792	2.1	g/cm ³
Compressive strength *	DIN EN ISO 604	ASTM C 579	100	MPa
Tensile strength *	DIN EN ISO 527		15	MPa
Modulus of elasticity *	DIN EN ISO 178	ASTM C 580	5.5 x 10 ³	MPa
Adhesive strength to ceramic tiles	DIN EN ISO 4624		> 2	MPa
Adhesion to carbon tiles	DIN EN ISO 4624		> EZF	MPa
Therm. Coefficient of linear expansion	ISO 11359-2	ASTM C 531	3.0 x 10 ⁻⁵	1/K
Thermal conductivity	ISO DIN 22007		1.8	W/mK
Electr. leakage resistance	DIN EN 14879-6 At >70% relative humidity	ASTM F 150/98	≤ 10 ⁶	Ω

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EZF = Inherent tensile strength

* Mean value, determined on annealed samples

PRECONDITIONS

The substrate, ambient air and Dolit materials must be in the temperature range 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 sprinkling 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 5 - 8 mm wide. The side surfaces of the tiles must be free of mortar material and the joint must be clean.

DELIVERY FORM / BEST BEFORE DATE

Component	Item no.	Quantity	Package	Months
Dolit-VEC-Solution	5232005001	25 kg	Hobbock	6
Dolit-VE-Accelerator	5232001023	2.5 kg	Can	24
Dolit-VE-Hardener	5232002007	1 kg	Bottle	12
Dolit-VEC-Powder	5211137002	20 kg	Bag	24

- All components must be stored and transported in a dry 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 VEC mortar mass	SB-STY20

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MIXING RATIO / CONSUMPTION**BEDDING AND JOINTING MORTAR****DOLIT VEC MORTAR MASS**

Component	kg/litre	Part by weight	kg / mix	Litres / batch
Dolit-VEC-Solution	0.441	100	1.000	1.000
Dolit-VE-Accelerator	0.011	2.5	0.025	0.025
Dolit-VE-Hardener	0.011	2.5	0.025	0.025
Dolit-VEC-Powder	1.587	360	3.600	3.200
Total	2.050	465	4.650	

Volume per batch	≈ 2.26 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	15.40 kg/m ²
Split tiles 240 x 115 x 40 mm	≈ 9.5 l	19.50 kg/m ²
Bricks 240 x 115 x 65 mm	≈ 11.5 l	23.60 kg/m ²
Bricks 240 x 115 x 80 mm	≈ 13.0 l	26.70 kg/m ²
Bed joint thickness	4 – 7 mm	
Joint width	5 – 8 mm	

MIXING / APPLICATION

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

WORKING EQUIPMENT

Mortar mixer
Trowel
Joint iron
Joint injector

Joint board (rubber chip)
Measuring cup
Scale
Mixing vessel

Drilling machine
Anchor stirrer

MIXING SEQUENCE



DANGER

The mixing sequence for VE systems must be strictly adhered to, otherwise there is a risk of explosion!

- Stir the solution well with an 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 out
- First stir the **Dolit-VEC-Solution** and pour it into the mixing vessel.
- Then add **Dolit-VE accelerator** and stir carefully with an anchor stirrer (300 - 500 rpm) to a homogeneous solution.
- Then add **Dolit-VE-Hardener** and mix again carefully until a homogeneous solution is formed.
- Move the stirrer past the vessel wall and bottom.
- Solids are measured or weighed out individually, added to the solution in portions and mixed in carefully until a lump-free mixture is obtained.
- Smaller quantities can be mixed by hand.
- Do not use the mortar after the working time has expired.

APPLICATION

- The mortar 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.
- When applying ceramic tiles or bricks, especially on flexible (elastomeric) substrates such as **Dolit Acid protection lining**, laying field sizes of about 3 x 3 m should be observed. The separating joints between the fields are sealed after completion of the first curing phase (usually after 1 - 2 days).
- For full-joint application, apply the mortar 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.
- In order to obtain visually flawless surfaces after jointing, the use of **Dolit protective varnish**, 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 - 60 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 16 hours.
- Curing time until complete chemical and mechanical resistance (at 20 °C) at least 7 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 DISCHARGE CAPACITY

The measurement of the earth leakage resistance R_E is carried out with a commercially available resistance measuring device up to 10^8 Ohm with 100 volts DC as 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.

The test takes place at the construction site and is carried out at the earliest 8 days after installation. In the case of non-electrically conductive ceramic tiles, measurements are taken in the area of the joint. Tile flooring needs to be cleaned before the test. There must be no insulating layers.

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

- For rectangular tiles 115 x 240 mm
- For square panels: 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.

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This issue replaces all previous versions.

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