

## Product Information

# Dolit HB

KI.WG.001 | 09/02/2022



## PRODUCT GROUP

Mortar, Water glass

## BINDER BASE

Water glass

## PROPERTIES / APPLICATION

**Dolit HB** is a 2-component mortar based on water glass. It is mainly used for the full and hollow joint laying and jointing of acid-resistant ceramic tiles, bricks and moulded parts as floor tiling or tank lining. In addition to its use in acid proofing, **Dolit HB** is also used in chimneys, wind or flue gas heaters and in light refractory applications due to its very good thermal resistance.

- Temperature resistance
  - Up to 900 °C
  - The temperature resistance is basically dependent on the individual chemical stress.
- Very high acid resistance (but not to hydrofluoric acid).
- Very good resistance to oxydising media, organic solvents, oils, greases or fuels.
- Very good resistance to aggressive gases or flue gas components.
- Free of halogens

## SYSTEM DESIGN

**Dolit HB Pre-Coat** [► 3]

**Dolit HB mortar mass** [► 3]

## PHYSICAL DATA

| Physical property                      | DIN               | ASTM        | Value                  | Unit              |
|--|-------------------|-------------|------------------------|-------------------|
| Density                                | DIN EN ISO 1183-1 | ASTM D 792  | 2.0                    | g/cm <sup>3</sup> |
| Shore D hardness                       | DIN 53505         | ASTM D 2240 | > 20                   | Shore D           |
| Flexural strength *                    | DIN EN ISO 178    | ASTM C 580  | 10                     | MPa               |
| Compressive strength *                 | DIN EN ISO 604    | ASTM C 579  | 35                     | MPa               |
| Tensile strength *                     | DIN EN ISO 527    |             | 4                      | MPa               |
| Modulus of elasticity *                | DIN EN ISO 178    | ASTM C 580  | 3.5 x 10 <sup>3</sup>  | MPa               |
| Adhesive strength to ceramic tiles     | DIN EN ISO 4624   |             | > 1.5                  | MPa               |
| Therm. Coefficient of linear expansion | ISO 11359-2       | ASTM C 531  | 1.2 x 10 <sup>-5</sup> | 1/K               |
| Thermal conductivity                   | ISO DIN 22007     |             | 1.2                    | W/mK              |

\* 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.

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.

## CONCRETE / SCREED

Refer to DIN EN14879-1.

The substrate must be pretreated to achieve sufficient adhesive tensile strength. It must be free from cement slurry, cement skin, loose and friable parts, structural defects and separating substances.

The residual moisture of cementitious substrates must not exceed 4 %.

The effect of water or water vapour pressure on the back of the coating/lining must be prevented.

All water glass mortars inherently have a certain porosity that allows liquids to penetrate. For this reason, concrete surfaces are to be provided with a liquid barrier layer according to the basic rules of acid proof construction. This surface must be prepared in such a way that the water glass mortar to be applied to it can adhere sufficiently.

## STEEL

Refer to DIN EN14879-1.

The steel surface is blasted to near white blast cleaning. A surface cleanliness of Sa 2½ according to DIN EN ISO 12944-4 and the roughness grade "Medium (G)" according to DIN EN ISO 8503-1; minimum surface roughness  $R_z = 70 \mu\text{m}$  must be achieved. After blasting, the reformation of rust must be prevented by suitable measures.

## DELIVERY FORM / BEST BEFORE DATE

| Component         | Item no.   | Quantity | Package | Months |
|-------------------|------------|----------|---------|--------|
| Dolit-HB-Solution | 5221008001 | 25 kg    | Hobbock | 24     |
| Dolit-HB-Powder   | 5221042001 | 25 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!

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## GISCODE

| Product              | GISCODE |
|----------------------|---------|
| Dolit HB mortar mass | n/a     |

## MIXING RATIO / CONSUMPTION

### PRIMER ON STEEL SURFACES

#### DOLIT HB PRE-COAT

| Component         | kg/m <sup>2</sup>   | Part by weight | kg / mix      | Litres / batch |
|-------------------|---------------------|----------------|---------------|----------------|
| Dolit-HB-Solution | 0.500               | 100            | 12.500        | 8.800          |
| Dolit-HB-Powder   | 0.500               | 100            | 12.500        | 10.900         |
| <b>Total</b>      | <b>1.000</b>        | <b>200</b>     | <b>25.000</b> |                |
| Area per batch    | ≈ 25 m <sup>2</sup> |                |               |                |

### BEDDING AND JOINTING MORTAR

#### DOLIT HB MORTAR MASS

| Component         | kg/litre             | Part by weight | kg / mix     | Litres / batch |
|-------------------|----------------------|----------------|--------------|----------------|
| Dolit-HB-Solution | 0.500                | 100            | 1.430        | 1.000          |
| Dolit-HB-Powder   | 1.500                | 300            | 4.290        | 3.730          |
| <b>Total</b>      | <b>2.000</b>         | <b>400</b>     | <b>5.720</b> |                |
| Volume per batch  | ≈ 2.86 l Mortar mass |                |              |                |

#### Mortar required for full-length installation (bedding joint 5 mm, butt joint 8 mm)

|                               |          |                         |
|-------------------------------|----------|-------------------------|
| Split tiles 240 x 115 x 20 mm | ≈ 7.5 l  | 15.00 kg/m <sup>2</sup> |
| Split tiles 240 x 115 x 40 mm | ≈ 9.5 l  | 19.00 kg/m <sup>2</sup> |
| Bricks 240 x 115 x 65 mm      | ≈ 11.5 l | 23.00 kg/m <sup>2</sup> |
| Bricks 240 x 115 x 80 mm      | ≈ 13.0 l | 26.00 kg/m <sup>2</sup> |
| 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

Lambskin roller

Brush

Surface brush

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Mortar mixer  
Trowel

Joint iron  
Joint injector

Joint board (rubber chip)

### MIXING SEQUENCE

- 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 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.

### APPLICATION

To prevent rusting, steel surfaces should be coated with **Dolit HB Primer** immediately after blasting. For this purpose, **Dolit HB Primer** is applied evenly to the steel surface with a lambskin roller, brush or surface brush.

- The mortar can be used for the full-joint or hollow-joint installation of tiles or bricks.
- Apply the bedding joint to the substrate.
- 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.
- 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

- Commissioning of tile linings or brick linings after 5 days at the earliest.
- Commissioning of tile linings or brick linings when exposed to liquids above 150 °C after 8 - 10 days at the earliest.
- Lined tanks and apparatus should first be started up with diluted mineral acids.
- In the case of a longer time interval between completion and start-up or during prolonged downtime, it is expedient to fill one third of the tank or apparatus with low-concentrated acidic water. Open tanks must be covered.

### CLEANING

Tools soiled with uncured materials can be cleaned with water.

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### 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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