Product Information

Dolit HWT

KI.WG.004 | 09/02/2022

PRODUCT GROUP

Mortar, Water glass

BINDER BASE

Water glass

PROPERTIES / APPLICATION

Dolit HWT is a halogen-free, 2-component water glass mortar optimised for bedding and jointing acid-resistant ceramic tiles or bricks on floor surfaces, in pits or trenches. Floor tilings jointed with **Dolit HWT** have outstanding chemical and thermal resistance, especially under acidic and neutral loads.

The main areas of application are tank farms, secondary containments, production areas and logistics or infrastructure areas in which acids (e.g. sulphuric acid, hydrochloric acid, phosphoric acid) are typically used on a large chemical scale.

- Temperature resistance
  - Up to 450 °C
  - The temperature resistance is basically dependent on the individual chemical stress.
- Very high acid resistance (but not to hydrofluoric acid).
- Water-resistant, resistant to neutral pH, rainwater-resistant (outdoor use possible).
- Very good resistance to oxydising media, organic solvents, oils, greases or fuels.
- Free of halogens
- Can also be used for neutral stress.
- Application on metallic substrates possible without pre-treatment.

SYSTEM DESIGN

Dolit HWT mortar mass [▸ 3]

PHYSICAL DATA

Physical property	DIN	ASTM	Value	Unit
Density	DIN EN ISO 1183-1	ASTM D 792	2.2	g/cm³
Compressive strength *	DIN EN ISO 604	ASTM C 579	70	MPa
Tensile strength *	DIN EN ISO 527		7	MPa
Modulus of elasticity *	DIN EN ISO 178	ASTM C 580	3.0×10^3	MPa
Adhesive strength to concrete/screed	DIN EN ISO 4624		> EZF	MPa
Adhesive strength to ceramic tiles	DIN EN ISO 4624		> EZF	MPa
Therm. Coefficient of linear expansion	ISO 11359-2	ASTM C 531	1.5×10^{-5}	1/K
Thermal conductivity	ISO DIN 22007		1.2	W/mK

EZF = Inherent tensile strength

* Mean value, determined on annealed samples

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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.

DELIVERY FORM / BEST BEFORE DATE

Component	Item no.	Quantity	Package	Months
Dolit-HW-Solution 1	5221001001	25 kg	Hobbock	24
Dolit-Filler HW	5221137001	25 kg	Bag	24

- All components must be stored and transported in a dry place and the **Dolit-HW-solution** must be frost-free.
- 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 HWT mortar mass	n/a

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MIXING RATIO / CONSUMPTION

BEDDING AND JOINTING MORTAR

DOLIT HWT MORTAR MASS

Component	kg/litre	Part by weight	kg / mix	Litres / batch
Dolit-HW-Solution 1	0.220	100	2.850	2.000
Dolit-Filler HW	1.930	880	25.000	19.500
Total	**2.150**	**980**	**27.850**	

Volume per batch	≈ 13 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	16.30 kg/m²
Split tiles 240 x 115 x 40 mm	≈ 9.5 l	20.50 kg/m²
Bricks 240 x 115 x 65 mm	≈ 11.5 l	24.80 kg/m²
Bricks 240 x 115 x 80 mm	≈ 13.0 l	28.00 kg/m²
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	Joint board (rubber chip)	Scale
Trowel	Duo agitator	Mixing vessel
Joint iron	Spiral stirrers	
Joint injector	Measuring cup	

MIXING SEQUENCE

- Pour measured or weighed quantity **Dolit-HW solution** into a mixing vessel.
- **Dolit-Filler HW** Add in portions.
- Mix the components with a duo stirrer (300 - 500 rpm) to a homogeneous solution. Move the stirrer past the vessel wall and bottom.
- Stir intensively for a total of ≈ 5 minutes until the initially crumbly mixture has become a homogeneous mortar.
- Then let the mortar rest for 2 minutes.
- Then mix thoroughly again for ≈ 3 minutes.
- Smaller quantities can be mixed by hand.
- Do not use the mortar after the working time has expired.

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APPLICATION

- The mortar can be used for the full-joint or hollow-joint installation of tiles or bricks.
- Bedding joint is applied to the substrate in a thickness of 4 - 7 mm.
- For full-joint application, apply the mortar to two side edges of the tiles or bricks. Then place the tile or brick in position.
- To achieve optimum adhesion, the mortar must be applied to both the surface of the substrate and the tile or brick in such a way that intensive contact is made. The brick or tile is then rubbed into the intended 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

- Waiting time until walkability (at 20 °C) at least 24 hours.
- Curing time until complete chemical and mechanical resistance (at 20 °C) at least 8 days.

CLEANING

Tools soiled with uncured materials can be cleaned with water.

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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