

PRODUCT GROUP

Mortar, Water glass

BINDER BASE

Water glass

PROPERTIES / APPLICATION

Dolit HWF is a halogen-free, 3-component water glass mortar for bedding and jointing tile lining and masonry, which not only has outstanding resistance to acid loads but, unlike other water glass mortars, can also be used in neutral.

Dolit HWF is used where strong acidic loads typically occur at elevated temperatures, but neutral aqueous loads may also occur. In ore processing, **Dolit HWF** is mainly used in (pressure leaching) autoclaves, especially in the steam zone. In the broad field of chemical industry and process technology, it is used for lining (washing/drying/absorption) towers or chimneys, or for laying acid-resistant ceramic tiles and bricks in secondary containments, production areas or tank cups.

- 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 (use outdoors possible).
- 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
- Can also be used for neutral stress.
- Can also be used as an injection and jointing compound.
- Application on metallic substrates possible without pre-treatment.

SYSTEM DESIGN

Dolit HWF mortar mass ► 3]

Dolit HWF Jointing compound ► 4]

PHYSICAL DATA

Physical property	DIN	ASTM	Value	Unit
Density	DIN EN ISO 1183-1	ASTM D 792	2.2	g/cm ³
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 x 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 x 10 ⁻⁵	1/K
Thermal conductivity	ISO DIN 22007		1.2	W/mK

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.

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.

Product Information

Dolit[®] HWF

KI.WG.003 | 09/02/2022



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-HW-Solution 1	5221001001	25 kg	Hobbock	24
Dolit-HW-Solution 2	5221002002	20 kg	Canister	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.
- If the **Dolit-HW-Solution 2** shows solid parts (crystallisation at low temperatures), a homogeneous solution can be produced again by briefly heating to 40 °C (maximum 2 days heating). The package should be closed and shaken occasionally for mixing.

Safety notice

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

GISCODE

Product	GISCODE
Dolit HWF mortar mass	n/a

MIXING RATIO / CONSUMPTION

BEDDING AND JOINTING MORTAR

DOLIT HWF MORTAR MASS

Component	kg/litre	Part by weight	kg / mix	Litres / batch
Dolit-HW-Solution 1	0.215	100	2.850	2.000
Dolit-HW-Solution 2	0.045	21	0.600	0.600
Dolit-Filler HW	1.890	877	25.000	19.500
Total	2.150	998	28.450	
Volume per batch	≈ 13.2 l Mortar mass			

Product Information

DolitHWF

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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/m ²
Split tiles 240 x 115 x 40 mm	≈ 9.5 l	20.50 kg/m ²
Bricks 240 x 115 x 65 mm	≈ 11.5 l	24.80 kg/m ²
Bricks 240 x 115 x 80 mm	≈ 13.0 l	28.00 kg/m ²
Bed joint thickness	4 – 7 mm	
Joint width	5 – 8 mm	

INJECTION AND JOINTING COMPOUND

DOLIT HWF JOINTING COMPOUND

Component	kg/litre	Part by weight	kg / mix	Litres / batch
Dolit-HW-Solution 1	0.273	100	3.750	2.600
Dolit-HW-Solution 2	0.037	14	0.500	0.500
Dolit-Filler HW	1.820	667	25.000	19.500
Total	2.130	781	29.250	

Volume per batch	≈ 13.7 litres
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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.

WORKING EQUIPMENT

Mortar mixer	Joint board (rubber chip)	Duo agitator
Trowel	Measuring cup	Spiral stirrers
Joint iron	Scale	
Joint injector	Mixing vessel	

MIXING SEQUENCE

- Liquid components are measured or weighed and transferred to a mixing vessel.

NOTE!

Do not stir the liquid components yet!

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

APPLICATION

Bedding and Jointing Mortar

NOTE!

The mortar must not come into contact with water during processing or curing. Do not use water as a smoothing agent. Do not re-adjust mortar during application with water or additional solution. If the mortar rolls off the surface during application, do not continue to use it.

- 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.

Injection and jointing compound

NOTE!

The potting compound must not come into contact with water during processing or curing. Do not use water as a smoothing agent. Do not adjust the grout during processing with water or additional solution to make it workable again.

- Inject grout into cavities or behind masonry with a grout gun or pour in with a measuring cup.

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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This issue replaces all previous versions.