

STEULER ACID MORTAR S 50 HF

Halogen-free water glass mortar for bedding and jointing of acid resistant tiles and bricks

Base

Potassium water glass

Material Group

Mortars, Jointing Materials

Description

Halogen-free 2-component water glass mortar for the construction of filled joint- and hollow joint- applied acid resistant tile and brick linings on floor areas.

Use

Laying of acid resistant tiles and bricks for floors, trenches and foundations; acid resistant tile and brick linings for towers and pipes.

Properties

- halogen-free
- can be applied directly to metallic substrates without any special preparation (no corrosion on lead- or chromium-nickel-steel)
- thermal resistance up to 900 °C

Physical Data

Property (unit), Test method	Value
Density [g/cm ³], DIN EN ISO 1183-1, ASTM D 792	2.0
Flexural strength [MPa], DIN EN ISO 178, ASTM C 580	13.5
Compressive strength [MPa], DIN EN ISO 604, ASTM C 579	40
Modulus of elasticity [MPa], DIN EN ISO 178, ASTM C 580	5500
Adherence to ceramic bricks [MPa], DIN EN ISO 4624	≥ 1.5
Linear shrinkage [%]	1.0
The thermal coefficient of linear expansion [1/K], ISO 11359-2, ASTM C 531	12 x 10 ⁻⁶
Lowest working temperature [°C]	5
Maximum working temperature [C]	35
Thermal conductivity [W/mK], ISO DIS 22007	1.75
Water absorption [%]	10.0

Data are mean values

Chemical Resistance

Resistant to all acids and acid-hydrolysing compounds as well as to all organic compounds as long as they do not hydrolyse alkaline.

For detailed information about the chemical resistance please refer to Technical Information TI 350.

Please contact our application engineering for approval of the project-specific possible application.

Substrate

Uneven spots should be levelled in the substrate already. Do not apply the mortar directly to the substrate! If the substrate is not provided with a surface protection system, apply with a suitable primer and sprinkle if necessary. Please contact our Application Technology Department for possible solutions.

Usually the mortar is applied onto STEULER-KCH's coating systems or rubber linings.

Concrete / screed

Refer to DIN EN 14879-1 as well as to STEULER-KCH-Formsheet 010.

To attain a sufficient adhesive tensile strength, the substrate is generally to be pretreated in such a way that it is free of cement slurry, cement skin, loose and crumbly particles, structure imperfections and separating substances.

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

Steel

Refer to DIN EN 14879-1 as well as to STEULER-KCH-Formsheet 020.

The steel surface shall be sandblasted to a metallic bright finish. A preparation degree of SA 2 ½ as specified in DIN EN ISO 12944-4 and a roughness grade "medium (G)" as specified in DIN EN ISO 8503-1 must be achieved; minimum surface roughness $R_z = 70 \mu\text{m}$. After blasting, the formation of new rust must be prevented by suitable measures, e. g. priming directly.

The substrate should have a temperature of approx. 10 – 25 °C.

Moisture

During application, the substrate must be kept absolutely dry. Uncured material has to be protected from any kind of moisture (condensation, fog, precipitation or other water source). Distance to dew point has to be at least 3 K, at a relative humidity of above 70 % at least 5 K.

Packaging / Shelf life

All components must be stored and transported dry and frost-free. The minimum storage life applies to a storage temperature of 20 °C, unless otherwise specified. Higher temperatures reduce, lower temperatures increase the shelf life.

Components	Item number	Package	Content	Shelf life
Silica MH	5021007001	Drum	25 kg	24 Months
Acid-Cement-Powder-S50-HF	5021138001	Bag	25 kg	24 Months

For handling, transport and storage observe the relevant material safety data sheets.

If necessary larger packages of Silica MH are also available.

Mixing Ratio / Consumption

STEULER Acid cement S 50 HF

	Part by weight	Part by volume
Silica MH	1.0	1.0
Acid-Cement-Powder-S50HF	3.2	3.6
Consumption	2,000 kg/litre mortar mass	
Bed / bed joint thickness	approx. 6 - 8 mm	
Joint width	approx. 4 - 8 mm	
Joints depth	min. 15 mm	

Consumption of mortar by filled-joint laying (bed joint 5 mm / butt joints 7 mm):

Split tiles 240 x 115 x 20 mm	approx. 7.5 l	15 kg/m ²
Split tiles 240 x 115 x 40 mm	approx. 9.5 l	19 kg/m ²
Bricks 240 x 115 x 65 mm	approx. 11.5 l	23 kg/m ²
Bricks 240 x 115 x 80 mm	approx. 13 l	26 kg/m ²

Pot Life

Pot life depends on temperature:

20 °C	approx. 30 - 60 minutes
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Curing times

Filled-joint laying

Curing times to support foot traffic depend on the temperature and are as follows:

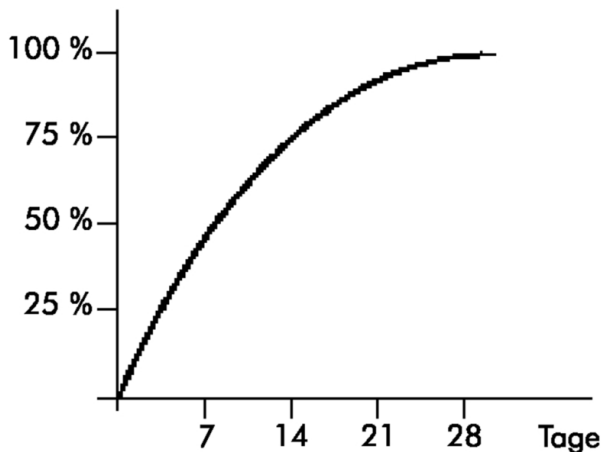
5 °C	48 h
> 10 °C	24 h

To achieve full chemical resistance: at least 8 days at 20 °C.

Hollow joint laying

For filling the joints you should walk carefully on open-joint layed tiles at the earliest after 5 days. Filling the joint with resin based cements should be carried out also at the earliest after 5 days. Walkability respectively initial operation de-pends on the demands of the filling material for the joints.

STEULER ACID FILLER S 50 HF reaches its strength at 20°C only after 28 days. The strength curve appears as follows:



Due to the curing process, the full mechanical and chemical strength is not achieved until 28 days after the last brick / tile has been installed. Please refer to the above graph for the applicable strength values based on elapsed time.

Due to the curing process, commissioning should be avoided before 28 days have elapsed.

Safety and Disposal

- Sufficient aeration and de-aeration (especially in tanks and pits).
- No smoking/no fire
- Refer to the Safety Data Sheets
- Observe danger references and safety recommendation labels.
- Wear required personal protective equipment (avoid skin contact with materials)
- Clean and protect hands with skin protective soap and skin protection cream (no solvents)
- Wear a dust mask when sanding (e.g. for repairs).
- Instructions as per § 14 of GefahrstoffV (Toxic Substances Act) and TRGS 507 (Technical regulations for Hazardous Substances - Germany)
- Accident precautions issued by the Liability Insurance Association for the Chemical Industries (Germany)

Do not expose materials to heat or open flame, this applies in particular to welding works (weld beads).

Preferably consume residual quantities. Do not pour into a spout or dustbin! Collect separately for disposal in durable, lockable and labeled containers.

Cleaning of Equipment

Tools can be cleaned with water. During application the mortar must not come into contact with water!

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This issue replaces all previous versions.