



You Build, We Protect!

HEGGEL® SP 660

High-Temperature Water Glass Mortar

Description:

HEGGEL SP 660 is a two-component halogen-free mortar formulated with water glass, primarily designed for the comprehensive bedding and jointing of acid-resistant tiles, bricks, and moulded parts. It is ideally suited for applications in floor tiling or as a lining for tanks.

Characteristics:

- Excellent acid resistance (Not including hydrofluoric acid)
- Highly resistant to oxidizing agents, organic solvents, oils, greases, and fuels
- Halogen-free
- High temperature resistance up to 900°C (Dependent on the type of chemical being used)
- Exceptional resistance to aggressive gases or flue gas components

Applications:

HEGGEL SP 660 is designed for the bedding and jointing of tile/brick linings. Renowned for its acid-proofing capabilities, it also finds versatile applications in areas such as chimneys, wind or flue gas heaters, and light refractory contexts, thanks to its exceptional thermal resistance properties. HEGGEL mortar systems can be used for the full-joint or hollow-joint installation of tiles / bricks.

Chemical Resistance:

Information on the chemical resistance is available on request.

Pot Life (20°C):

Product	Time
HEGGEL SP 660	Approx. 30 - 60 min

Note: Depending on the actual ambient temperature, the pot life may vary. Higher temperatures could shorten the pot life, while lower temperatures would prolong it. For further information, please consult HEGGEL!

Curing (20°C):

Load Capacity	Time
Accessible	At least 5 days
Exposed to liquids above 150°C	At least 8 - 10 days

Note: Tanks and apparatus with linings should initially be operated using diluted mineral acids. If there is an extended period between the completion and start-up of a tank or apparatus or during prolonged periods of inactivity, it is advisable to fill one third of the tank or apparatus with low-concentration acidic water. Additionally, open tanks should be adequately covered.

Packaging:

The products are supplied in the following standard package sizes:

Product	Size	Package
HEGGEL SP 660 Solution	25 kg	Hobbock
HEGGEL SP 660 Powder	25 kg	Bag

Storage:

The products must be stored in a cool and dry place, away from direct sunlight. The solution part must be frost-free. At the indicated storage temperatures, the shelf life of the products is at least the below mentioned periods:

Product	Temperature	Shelf Life
HEGGEL SP 660 Solution	20°C	24 Months
HEGGEL SP 660 Powder	20°C	24 Months

If the shelf life is passed, the materials must be tested prior to use. Higher temperatures by storage and transport would reduce the shelf life, whereas lower temperatures would extend the minimum shelf life. The containers are to be kept closed tightly. All liquid products must be stored in frost-proof conditions.

1. Surface Preparation

As a rule, the mortar should be built up on one of the HEGGEL linings or coatings; In the case that such a sealing layer is not applied, then at least a suitable primer with adequate sprinkling must be used. Any unevenness in the substrate must already be levelled out.

1.1. Carbon Steel

All contaminants such as those which are not visible but detectable, have to be removed in accordance with DIN EN14879-1. Steel surfaces must be blasted to "Near White Metal" in accordance with DIN EN ISO 12944-4. A standard preparation degree of SA 2½ is required. The roughness grade "Medium (G)" according to DIN EN ISO 8503-1; minimum surface roughness Rz = 70 µm must be achieved. After blasting, the reformation of rust must be prevented by suitable measures.

1.2. Concrete

In accordance with EN14879-1 appropriate action must be taken to prepare the concrete surfaces; they must be dry and dust-free and free of contaminants such as cement slurry, cement skin, loose and friable parts structural defects and separating substances. The concrete must have sufficient adhesive tensile strength The residual moisture content shall not exceed 4%.

The effect of water or water vapor 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.

2. Environmental Conditions

The specified environmental conditions must be complied with during surface preparation and tile/brick lining. During the application, the substrate must be kept completely dry. No moisture (condensate,

mist, etc.) may get onto the surfaces that are to be protected. The construction site has to be protected against direct sunlight and draught.

Environmental Conditions	Value
Relative humidity	≤ 80%
Surface & material temperature	≥ +10°C up to +30°C
Optimum processing temperature	+20°C
Dew Point Distance	min. 3K (At a relative humidity of above 70 % at least 5 K.)

Elevated or decreased temperatures could affect the working time and consistency of the mixture. As a result, consumption and application performance may vary.

3. Working Tools

- Mortar mixer
- Joint iron
- Joint board
- Brush
- Trowel
- Joint injector
- Lambskin roller
- Surface brush

4. Mixing Instruction

HEGGEL SP 660 (Bedding and jointing mortar)	Parts by Weight
HEGGEL SP 660 Solution	100
HEGGEL SP 660 Powder	300

HEGGEL SP 660 Primer (On steel)	Parts by Weight
HEGGEL SP 660 Solution	100
HEGGEL SP 660 Powder	100

Before using or partially withdrawing the solution, stir it thoroughly with an anchor stirrer at a speed of 300 - 500 rpm, ensuring to move the stirrer along the vessel's wall and bottom. Measure or weigh the liquid components and transfer them into a mixing vessel. For the solids, measure or weigh them individually, then gradually add them to the solution. Carefully mix these with an anchor stirrer, also at 300 - 500 rpm, until a smooth, lump-free mixture is achieved. Throughout the mixing process, remember to repeatedly move the stirrer across the vessel wall and bottom to ensure even mixing

5. Application

To prevent against rusting, it's imperative to apply **HEGGEL SP 660 Primer** to steel surfaces promptly following blasting. This can be achieved by evenly coating the steel surface with **HEGGEL SP 660**

Primer using a lambskin roller, brush, or surface brush, ensuring thorough and uniform coverage.

HEGGEL SP 660 is suitable for both the full-joint as well as hollow-joint installation of tiles / bricks. Apply the bedding joint to the substrate. For a full-joint installation, apply the mortar to both side edges of the tiles or bricks. Once the mortar is applied, position the tile or brick in its designated place and firmly set the tile or brick into its specified position. Using a trowel, clear away the mortar bead and even out the joint. For a hollow joint setup, keep the butt joint clear, filling it at a later stage.

The jointing can be done subsequently with a joint injector, joint iron or joint board. To compress the joint, excess material should be pressed with the joint iron into the joint. The remaining material should be removed with the trowel.

When HEGGEL Mortar is being used for hollow-joint installation of tiles, the bedding joint must be cured and dry again. There should be a rectangular cross-section in the open joint (depth >15 mm, width: 5 - 8 mm). The sides of tiles must be free of mortar and the joints must be clean.

Extra attention must be applied to ensure that the work is free of voids.

6. Consumption

Required Mortar for full-length installation: (Bed joint 5 mm, Joint width 8 mm)

Material	Size (mm)	Coverage (kg/m ²)
Bricks	240 x 115 x 80	Approx. 26.00
Bricks	240 x 115 x 65	Approx. 23.00
Tiles	240 x 115 x 40	Approx. 19.00
Tiles	240 x 115 x 20	Approx. 15.00
Bed joint	4-7 mm	
Joint width	5-8 mm	

Note: Values are approximate requirements.

7. Cleaning

Any tools that are contaminated with uncured materials can be cleaned with water.

8. Safety Measures

The material safety data sheets of the individual components, the safety instructions on the packing (label) as well as the legal requirements for handling hazardous materials must be observed.

Technical Data

Title	DIN	ASTM	Value	Unit
Density	DIN EN ISO 1183-1	ASTM D792	2.0	g/cm ³
Shore D Hardness	DIN 53505	ASTM D2240	> 20	Shore D
Flexural Strength *	DIN EN ISO 178	ASTM C580	10	MPa
Compressive Strength *	DIN EN ISO 604	ASTM C579	35	MPa
Tensile Strength *	DIN EN ISO 527	-	4	MPa
Modulus of Elasticity *	DIN EN ISO 178	ASTM C580	3.5 x 10 ³	MPa
Adhesive Strength to Ceramic Tiles	DIN EN ISO 4624	-	> 1.5	MPa
Therm. Coefficient of Linear Expansion	ISO 11359-2	ASTM C531	1.2 x 10 ⁻⁵	1/K
Thermal Conductivity	ISO DIN 22007	-	1.2	W/mK

* Mean value, determined on annealed samples

HEGSEL SP 660; Revision No: 1.10 / Last Revision Date: 20.07.2023

All information contained herein is based on the current state of our knowledge and practical experience at the time of release. Therefore, please make sure that this is the latest edition of the Technical Data Sheet. All data are only intended as a guideline for informational purposes and do not constitute a legally-binding warranty of the suitability for a certain purpose of use, due to its dependence on site conditions and possible processing, use and applications. All information contained in this technical datasheet is subject to change without notice.

HEGSEL GmbH

Huttropstr. 60
45138 Essen
Germany

Tel: +49 201 17003 270

Fax: +49 201 17003 277

E-Mail: info@heggel.de

Web: www.heggel.de