

# HEGSEL® EP 674

Cold Curing Epoxy Based Bedding Mortar

*You Build, We Protect!*

**Description:**

**HEGSEL EP 674** is a grey, three-component, cold curing synthetic mortar based on an epoxy resin and depending on the application with different fillers.

**Characteristics:**

- Excellent adhesion to concrete and ceramic
- Good chemical resistance
- Nearly shrinkage-free curing
- Universal "all round" material

**Applications:**

**HEGSEL EP 674** is suitable as bedding and jointing mortar for tiles, bricks and fittings made of ceramic to construct a chemically, thermally and mechanically resistant layer or lining.

Due to its dense state and good compatibility with the concrete, a special sealing layer may often be spared. The ceramic tiles can be bedded directly on the concrete substrate (On top of the applied primer) with **HEGSEL EP 674** using the two-bed jointing method. In addition, **HEGSEL EP 674** can be used on cement-based substrates as filling and levelling mortar with the thicknesses of 2 to 5 mm as well as a thin **HEGSEL EP 674** protective coating (coating thickness of about 0.3 - 0.7 mm).

**Chemical Resistance:**

Information on the chemical resistance is available on request.

**Substrate:**

Components shall be designed and manufactured in accordance with EN 14879-1. Before start of brick lining work, the suitability of the surface preparation measures according EN 14879-1 must be checked and recorded.

**Pot Life (20°C):**

Product	Time
Primer	Approx. 30 – 60 min
Bedding & jointing mortar	Approx. 90 min

**Curing (20°C):**

Load Capacity	Time
Accessible	Approx. 16 hrs
Over Workable	Approx. 16 hrs
Chemical Load	Approx. 7 days

**Packaging:**

The products are supplied in the following standard package sizes:

Product	Size
HEGSEL EP 670 Hardener	5 kg
HEGSEL EP 670 Hardener	20 kg
HEGSEL EP 670 Solution	20 kg
HEGSEL EP 670 Powder	25 kg
HEGSEL EP 670 Powder Conductive Black	25 kg
HEGSEL EP 670 CLE	25 kg
HEGSEL EP 670 DEF	0.25 kg

**Storage:**

The products must be stored in a cool and dry place, away from direct sunlight. At the specified storage temperatures, a shelf life of the products is given of at least for the following periods:

Product	Temperature	Shelf Life
HEGSEL EP 670 Hardener	≤ +25°C	24 Months
HEGSEL EP 670 Solution	≤ +25°C	24 Months
HEGSEL EP 670 Powder	-	24 Months
HEGSEL EP 670 Powder Conductive Black	-	24 Months
HEGSEL EP 670 CLE	-	24 Months
HEGSEL EP 670 DEF	≤ +20°C	24 Months

If the storage time is exceeded, the materials must be tested before use. Higher storage and transport temperatures will reduce the shelf life. The containers must be kept tightly closed. Liquid products must be stored frost-proof. In addition, the DIN 7716 must be observed.

## 1. Surface Preparation

Unevenness or surface defects such as rock pockets, casting failures, laitance and other failures which degrade the rigidity of the surface shall be removed and repaired. The repairs can be performed with **HEGGEL EP 674** or **HEGGEL EP 672**, on top of the primer application. Larger defects need to be remedied with **HEGGEL EP 674** notched trowel, **HEGGEL EP 674** screed or concrete to flatten. The steel structures connected to the component or mounted in the concrete have to be cleaned down to white metal (SA 2½).

### 1.1. Concrete and cement-base areas

Appropriate action shall be taken to prepare the concrete surfaces; dry and free of dust and free of contaminants such as oil or grease. The concrete shall have minimum tensile strength of 1.5 N/mm<sup>2</sup>. The residual moisture in the concrete shall not exceed 4%. New casted concrete surfaces should be kept for at least 28 days to dry. All surfaces on the substrate shall be free of cracks.

## 2. Environmental Conditions

The specified environmental conditions must be observed during surface preparation and brick lining and be tested and recorded according EN 14879-6.

Environmental Condition	Value
Relative Humidity	≤ 80%
Surface Temperature	≥ +10°C up to +30°C
Application Temperature	+20°C ± 5°C recommended
Dew Point Distance	min 3°C

## 3. Application

The execution of the brick lining work is only permitted, if the requirements of "Surface Pre-treatment" and "Environmental Conditions" are met.

### 3.1. HEGGEL EP 670 Primer

**HEGGEL EP 670 Primer** is applied onto the substrate or onto the lined membrane firmly and uniformly by means of a masonry brush, paste brush, paint brush, roller or paint pad. The consumption is about 300 to 400 g/m<sup>2</sup>.

## 3.2. HEGGEL EP 674

**HEGGEL EP 674** is applied with a trowel onto the substrate or onto the membrane. The installation of the tiles or bricks has to be performed as cavity-free as possible, as well as with full coverage and with hollow joint method. If the tiles are going to be installed with hollow joint method in alkaline joint mortars and are going to be grouted with **HEGGEL EP 674**, it should be noted that the basement layer must be cured, acidified and dried upon acidifying. The open joints should have a perpendicular cross-section, at least 15 mm deep and 5 to 8 mm wide. The lateral faces of the tiles must be free of residue and the joints must be clean.

With **HEGGEL EP 670 Conductive Powder Black**, a dissipative layer of tiles can be achieved. In the two-bed method, first a 3 mm thick **HEGGEL EP 670** bed joint is applied onto the fresh or sanded primer layer. Within 60 minutes the acid-resistant bricks/tiles are covered underneath with 2 - 3 mm jointing mortar and then laid onto the fresh mortar bed. The surfaces of the mortar bed or joints need to be compacted to avoid any remaining air pockets. The entire thickness of the bedding should not exceed 10 mm.

## 4. Application Tools

The following tools are essential for the application:

- Stirrer (max 300 rpm)
- Measuring cup & Mixing vessels
- Flat / wide brush / floor brush / paint pad
- Mortar trowel
- Grouting tool
- Miscellaneous (safety glasses, rubber gloves etc.)

## 5. Mixing Ratio

Pour **HEGGEL EP 670 Solution** in a mixing vessel and add **HEGGEL EP 670 Hardener** at the specified mixing ratio. The stirring of the merged components should be at least 3 minutes and must result in a homogeneous mixture. Then add **HEGGEL EP 670** powders in the recommended mixing ratio to this mixture and stirrer again. The stirring of the merged components should be at least 3 minutes and must result in a homogeneous mixture. Then pour the mixture into a clean pail and mix

again briefly. When mixing larger quantities, a forced mixer should be used.

HEGGEL EP 670 Primer	Parts by Weight (kg)	Parts by Volume (Liter)
HEGGEL EP 670 Solution	100	2.00
HEGGEL EP 670 Hardener	20	0.45

HEGGEL EP 674 Bedding Mortar	Parts by Weight (kg)	Parts by Volume (Liter)
HEGGEL EP 670 Solution	100	2.00
HEGGEL EP 670 Hardener	20	0.45
HEGGEL EP 670 Powder	700	11.20

HEGGEL EP 674 Jointing Mortar	Parts by Weight (kg)	Parts by Volume (Liter)
HEGGEL EP 670 Solution	100	2.00
HEGGEL EP 670 Hardener	20	0.45
HEGGEL EP 670 Powder	619	9.90

HEGGEL EP 674 Bedding and Jointing Mortar Conductive	Parts by Weight (kg)	Parts by Volume (Liter)
HEGGEL EP 670 Solution	100	2.00
HEGGEL EP 670 Hardener	20	0.45
HEGGEL EP 670 Conductive Black	250	3.73

## 6. Consumption

Bedding and jointing

(Bed Joint 5 mm / Cross Joint 5 - 7 mm)

Material	Sizes (mm)	Coverage (kg/m <sup>2</sup> )
Tiles	240 x 115 x 20	Approx. 17
Tiles	240 x 115 x 40	Approx. 19
Bricks	240 x 115 x 65	Approx. 22
Bricks	240 x 115 x 80	Approx. 24

## 7. Cleaning

Clean all equipment with or **HEGGEL EP 670 CLE** immediately after use. The cleaning is done while the material is still not hardened.

## 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	Standard	Value	Unit
Resistance to Ground (HEGGEL EP 670 tiling black)	EN ISO 1081	$\leq 1 \times 10^6$	$\Omega$
Flexural Strength	EN ISO 178	40	N/mm <sup>2</sup>
Density (Mixture)	EN ISO 2811 (ASTM D1475)	2.05	g/cm <sup>3</sup>
Compressive Strength	EN ISO 604	100	N/mm <sup>2</sup>
E-Modulus	-	$1.1 \times 10^4$	N/mm <sup>2</sup>
Coefficient of Thermal Expansion	-	$45 \times 10^{-6}$	1/K
Thermal Conductivity	-	1.7	W/m.K
Tensile Strength	EN ISO 527	40	N/mm <sup>2</sup>
Max Operating Temperature Dry	-	+60	°C
Max Operating Temperature Dry (In combination with ceramic tiles or bricks)	-	+120	°C

**Note:** The indicated temperatures are dependent on the present load and may vary

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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.

**HEGGEL GmbH**

Huttropstr. 60  
45138 Essen  
Germany

Tel: +49 201 17003 270

Fax: +49 201 17003 277

E-Mail: [info@heggel.de](mailto:info@heggel.de)

Web: [www.heggel.de](http://www.heggel.de)