

# HEGSEL® EP 673

Cold Curing Shrinkage-Free Epoxy Based Mortar

*You Build, We Protect!*

**Description:** HEGSEL EP 673 is a three-component, cold curing synthetic mortar based on epoxy resin and depending on the application with different fillers.

- Characteristics:**
- Excellent adhesion to concrete and ceramic
  - Good chemical resistance
  - Nearly shrinkage-free curing

**Applications:** HEGSEL EP 673 is suitable for the protection of concrete surfaces with low mechanical stress. The total layer thickness of HEGSEL EP 673 is approx. 0.3 - 0.7 mm.

**Chemical Resistance:** Information on the chemical resistance is available on request.

**Substrate:** Components to be brick lined or laminated shall be designed and manufactured in accordance with EN 14879-1. Before start of coating work or 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
HEGSEL EP 670 Primer	Approx. 30 – 60 min
HEGSEL EP 673	Approx. 30

**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 673 Powder Fine Gray	25 kg
HEGSEL EP 673 CLE	25 kg
HEGSEL EP 673 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 673 Powder Fine Gray	-	24 Months
HEGSEL EP 673 CLE	-	24 Months
HEGSEL EP 673 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 673 notched** trowel, **HEGGEL EP 673 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 lining work and be tested and recorded according EN 14879.

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 lining work is only permitted, if the requirements of "Surface Preparation" and "Environmental Conditions" are met.

## 3.1. HEGGEL EP 670 Primer

The **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 673

**HEGGEL EP 673** is applied onto the primer layer or onto the previous layer cross-wise, firmly and uniformly by means of a masonry brush, paste brush, or roller. The pot life depends on the substrate and the ambient temperature. If acid-proof bricks or tiles are going to be lined over the **HEGGEL EP 673**, flame dried silica sand (0.7 -1.2 mm) has to be broadcasted onto the very top fresh layer of the coating. The consumption is about 400 g/m<sup>2</sup>.

Exposure of the fresh protective coating to direct sunlight has to be avoided to prevent blistering. If possible, the coated surfaces may be shaded.

## 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
- 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

1 <sup>st</sup> layer HEGGEL EP 673 GRAY/WHITE	Parts by Weight (kg)	Parts by Volume (Liter)
HEGGEL EP 670 Solution	100	2.00
HEGGEL EP 670 Hardener	20	0.45
HEGGEL EP 673 Powder Fine Gray or White	40	0.60

2 <sup>ND</sup> + 3 <sup>RD</sup> layer HEGGEL EP 673 GRAY	Parts by Weight (kg)	Parts by Volume (Liter)
HEGGEL EP 670 Solution	100	2.00
HEGGEL EP 670 Hardener	20	0.45
HEGGEL EP 673 Powder Fine Gray	60	0.90

## 6. Cleaning

Clean all equipment with or **HEGGEL EP 673 CLE** immediately after use. The cleaning is done while the material is still not hardened.

## 7. 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
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	-	1.4 × 10 <sup>4</sup>	N/mm <sup>2</sup>
Coefficient of Thermal Expansion	-	45 × 10 <sup>-6</sup>	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)