

# HEGSEL Fix 880

2-C Ultra-High Chemical Resistant Repairing Mortar

**Description:** 2-component repairing mortar offering exceptional mechanical strength besides its excellent resistance against aggressive chemical and thermal conditions.

- Characteristics:**
- Recommended for repairing damaged equipment, coated structures or glass lined vessels
  - Excellent adhesive strength to wide range of substrates
  - Excellent broad range chemical resistance
  - Resist dissolved H<sub>2</sub>S at high temperatures
  - Resistant to CUI conditions
  - Curing at ambient temperature
  - Very high fouling resistance

**Product:** **HEGSEL Fix 880** is an advanced repairing mortar derived from a novel technology that combines, on a molecular level, both organic and inorganic molecules to provide a thermally stable highly crosslinked structure. It offers superior broad range chemical resistance from sub ambient to elevated temperatures in excess of 190°C, after only an ambient cure. **HEGSEL Fix 880** is especially suitable as repairing mortar for damaged equipment, vessels, ducts and also coated tanks. The cured mortar has excellent adhesive strength to various substrates and also offers high sliding abrasion resistance coupled with a very smooth finish that enhances fluid flow and prevents sludge build up. **HEGSEL Fix 880** can be steam cleaned at temperatures exceeding 190°C.

- Application Area:**
- Chemical tanks
  - Sour gas service
  - Hydrocarbon pressure vessels
  - Sour gas treating-amine units
  - Amine regenerator / storage tanks
  - Scrubber units
  - Condensers
  - Distillation units
  - Autoclaves
  - Heat exchangers
  - Evaporators
  - Process vessels

**Technical Data:**

Finish	Medium Gloss
Solids Content	100%
Mixed Viscosity @20°C	60.000 +/- 5.000 mPa.s
Number of coats	1
Practical Coverage	3.2 kg/ m <sup>2</sup> @ 1000 microns DFT
Mixing Ratio (Base : Hardener)	57:43 by weight
Pot Life at 20 °C	60 minutes
Tack Free/ Drying Time (20°C)	160 minutes at 20°C
Specific Gravity	2.08 gms/cm <sup>3</sup> (Base + Hardener)

**Physical Properties:**

Abrasion Resistance	ASTM D 4060 20 mg weight loss (Tabor CS-17/1kg/1000 cycles)
Impact Resistance	ASTM G14 Forward: 13 Joules Reverse: 3 Joules
Adhesives Strength	ASTM D4541 > 50 MPa (cohesive failure)
Temperature Resistance	NACE TM0174 +190°C Immersed +250 °C Non Immersed

**Packaging:** 1 kg composite kits

**Storage:** +36 months in unopened containers

### 1. Surface preparation

All loose material around the defect must be removed to leave sound firmly bonded coating. Spot grit blast the defect to bare metal having at least Sa2.5 cleanliness with a minimum 75 microns profile. Also, sweep blast 2 inches of surrounding sound coating to roughen it in order to accept overlap of the repair. Wash blasted area with Xylene before applying HEGGEL Fix 880.

### 2. Mixing

Thorough mixing will give optimum product performance. Ensure base and hardener are below 30°C before mixing and always keep material in the shade before, during and after mixing. When the base tin is opened any material on the lid must be added to the tin. Add HARDENER to BASE and stir vigorously using a stiff plastic or metal spatula until uniform colour is achieved. Mix for a further 2 minutes periodically scrapping inside of container to achieve complete mixing.

Mixed material remains usable for a time approximately equal to the pot life i.e. 60 minutes at 20°C, 40 minutes at 30°C and 25 minutes at 40°C. Do not mix more material than can be used within the pot life period.

### 3. Application

Before application, ensure that the surface temperature is at least 15°C and that the air temperature is 3°C above the dew point with a relative humidity below 80%. If the temperature of the substrate is below 15°C then external heating may be required to increase the ambient

temperature and so warm the substrate. If outdoors, plastic sheeting should be used to construct an enclosure around the equipment to be repaired before applying warm air into the space within the construction. Avoid re-contamination of prepared surface from nearby sources. Do not apply HEGGEL Fix 880 in windy conditions unless necessary, in which case enclose the equipment in plastic sheeting as described above. Stripe coat corners, edges and welds.

Apply HEGGEL Fix 880 by initially brushing firmly into the damaged areas to achieve surface wet out before building to specified film thickness in a single coat. Check regularly the wet film thickness using a wet film thickness gauge especially on concrete substrates where DFT measurements are not possible. The brush should be cleaned with MEK or acetone based thinners after application of every two kits.

### 4. Application Equipment

The mixture can be applied with a spatula or a stiff natural bristle brush, 3 inches wide and bristles no more than 2 inches long. If the brush is new then condition by vigorously bending and pulling bristles to remove all loose ones. This is an important step to avoid bristles contaminating the coating during application.

### 5. Drying Time

12 to 24 hours after application check the continuity of the applied mortar using a wet sponge holiday detector set at an operating voltage of 90V DC. Ensure that the coated surface is thoroughly wetted out by repeated passage of the

sponge over it. Alternatively, use a wire brush high voltage spark tester set at 800-1000V. A quantitative measure of the dry thickness can be obtained using an inductance type electronic dry film thickness tester.

### 6. Chemical Resistance

- 98% Sulphuric acid
- 37% Hydrochloric acid
- 100% Glacial acetic
- 50% Nitric acid
- Methylene chloride, vinyl chloride, benzyl chloride
- Amines
- Spent amines rich in H<sub>2</sub>S/CO<sub>2</sub>
- Carbon Disulphide
- Conc. Methanol, ethanol and derivatives
- Sodium hypochlorite, sodium perchlorate
- MEK, Toluene, Xylene, Acetone, Ammonia
- 50 – 75% Sodium Hydroxide
- Any chemical solution rich in chlorides or sulphates

### 7. Cure Schedule

Mortar is touch dry after ~ 160 minutes at 20°C. Unless stated otherwise allow a minimum period of 3 - 4 days cure at temperatures above 20°C before exposing to a chemical load. Maximum chemical resistance is obtained by exposing to 130°C steam for 4 hours any time after the 3-4 day ambient cure and before putting into service.

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HEGGEL 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