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# HEGSEL Fix 811

2-C High-Tech Corrosion Resistant Repairing Mortar

**Description:** 2-component repairing mortar offering excellent adhesive strength besides its superior corrosion resistance.

- Characteristics:**
- Recommended for repairing damaged equipment, glass/rubber lined vessels and defects in **HEGSEL Corr** coated equipment and tanks
  - Excellent adhesive strength to wide range of substrates, such as steel and hard/soft rubber lined surfaces
  - Excellent broad range chemical resistance
  - Resist dissolved H<sub>2</sub>S at high temperatures
  - Resistant to CUI service
  - Curing at ambient temperature
  - Very high fouling resistance

**Product:** **HEGSEL Fix 811** 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 225°C, after only an ambient cure. **HEGSEL Fix 811** is especially suitable as repairing mortar for damaged hard/soft rubber lined tanks, vessels, ducts and also **HEGSEL Corr 210**, **HEGSEL Corr 211** and **HEGSEL Corr 212** 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 811** can be steam cleaned at temperatures exceeding 225°C (437°F).

- Application Area:**
- Chemical tanks
  - Sour gas service
  - Hydrocarbon pressure vessels
  - Sour gas treating-amine units (DGA/MDEA/MEA)
  - Amine regenerator / storage tanks
  - Amine Molten Sulphur recovery tanks
  - Condensers
  - Distillation units
  - Autoclaves
  - Heat exchangers
  - Evaporators
  - Scrubber units
  - 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	0.40 m <sup>2</sup> /kg @ 800 microns DFT
Mixing Ratio Base : Hardener	57:43 by weight
Pot Life at 20 °C	60 minutes
Tack Free/ Drying Time (20°C)	150 minutes at 20°C
Specific Gravity	2.1 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 > 52 MPa (cohesive failure)
Elongation to break	BS 6319 Part 7 1985 1.8 %
Temperature Resistance	NACE TM0174 +225°C Immersed +280°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 811**.

## 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 811** 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 811** 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 (DEA, MDEA, MEA, DGA, ADIP)
- Spent amines rich in H<sub>2</sub>S/CO<sub>2</sub>
- Carbon Disulphide
- Molten Sulphur + acidic vapors
- 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 ~ 150 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 130oC steam for 4 hours any time after the 3-4 day ambient cure and before putting into service.

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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 actual 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.

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