

HEGSEL Corr 270

Solvent-Free, Graphite Modified, Phenolic Lining

Description:	HEGSEL Corr 270 (Liquid Graphite) is an advanced coating system designed to protect components that carry fluorinated acids and more specifically hydrofluoric acid at ambient and elevated temperatures. The maximum operating temperature will depend upon the type of chemical being used.
Characteristics:	<ul style="list-style-type: none"> • Solvent-free, graphite modified, phenolic lining offering ultra-high chemical resistance to concentrated organic / mineral acids and more specifically concentrated hydrofluoric acid at elevated temperatures up to 100 °C. Can be used up to 180 °C in acid vapours • Electrically dissipating • Cures at ambient temperature • Can be applied to both metallic and concrete surfaces
Applications:	Internal lining for pickling tanks, process vessels and associated piping. Concrete walls/floors in secondary containment areas.
Physical Properties:	<p>Abrasion Resistance: ASTM D 4060 32 mg weight loss (Taber CS-17/1kg/1000 cycles)</p> <p>Impact resistance: ASTM G14 Forward: 5 Joules Reverse: 2 Joules</p> <p>Adhesive Strength: ASTM D4541 16.0 MPa (cohesive failure)</p> <p>Elongation to break: BS 6319 Part 7 1985 1.0%</p> <p>Temperature Resistance: NACE TM0174 100 °C Immersed 200 °C Non Immersed</p>
Typical Chemical Resistance (full immersion)	<ul style="list-style-type: none"> • 70% Hydrofluoric acid • 37% Hydrochloric acid • 100% Glacial acetic • 84% Phosphoric acid • 98% Sulphuric Acid • 40% Chromic Acid • 50% Nitric Acid
Coating Data:	<p>Finish: Glossy</p> <p>Colours Available: Black</p> <p>Solids Content: 100%</p> <p>Mixed Viscosity @20 °C: 50,000 +/- 5000 mPa.s</p> <p>Typical Dry Film thickness: 1000 microns</p> <p>Number of Coats: 2-3</p> <p>Practical Coverage at 1000 microns: Approx. 0.40 m²/kg</p> <p>Pot Life at 20°C: 40 minutes (brush application)</p> <p>Tack Free/ Drying Time: 240 minutes at 20°C</p> <p>Storage Life: 12 months in unopened containers</p> <p>Packaging: 2.5kg kits</p> <p>Specific Gravity: 1.50 gms/cm³ (Base + Hardener)</p>

1. Surface preparation

For optimum results grit blast surface to remove the old coating system and then wash using high- pressure water jetting to remove any surface chemical contamination and soluble salts. Allow the substrate to dry and then re-blast the surface using angular grit to obtain a blast profile of at least 75 microns (Swedish Standard SA 2.5). Remove residual dust and grit. If surface has been immersed in salt water it needs to be grit blasted, left for 24 hours and then washed with fresh water before blasting again. New surfaces must be thoroughly degreased before final grit blasting. Once the surface is prepared it should be coated immediately.

2. Safety

Adequate ventilation is to be provided while mixing of product components and application work is in progress especially in enclosed areas such as pits and vessels. All vapours that are produced while working must be continuously removed using a positive suction system positioned near the floor of the pit or vessel.

3. 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. Hold the tin firmly between the feet to avoid the can spinning when mixed using a power mixer (electric or air operated). Add hardener gradually to the base while stirring slowly with the power mixer. When all the hardener has been added to the base increase the speed of power mixer to maximum and mix for further 2 minutes simultaneously scraping the inside wall of the can with a firm spatula or pallet knife so that all material is properly mixed. Mixed material remains usable for a time approximately equal to the pot life i.e. 40 minutes at 20°C and 20 minutes at 30°C.

Do not mix more material than can be used within the pot life period.

4. Application Equipment

Brush with stiff bristles no longer than 2 inches

5. Coating Application

Before coating ensure that the surface temperature is at least 18°C and that the air temperature is 3°C above the dew point with a relative humidity below 80%. Make sure that contamination of prepared surface does not occur from nearby sources. Do not apply coating in windy conditions. Apply **HEGGEL Corr 270** (Brush Grade) by pressing it into the substrate to achieve surface wet out and then build coating to specified film thickness of 1000 microns in two or three coats. Check regularly the wet film thickness especially on concrete substrates where DFT measurements are not possible. After coating the brush should be immediately cleaned with MEK or acetone based thinners. If a second coat of **HEGGEL Corr 270** (Brush Grade) is applied allow 6 hours before application of the second coat.

6. Dry Coating QC

Steel Substrate: 24 hours after application check the continuity of the applied coating 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. A quantitative measure of the dry coating thickness can be obtained using an inductance type electronic dry film thickness tester. Coating should be repaired if applied 25% below specification. Pinholes, misses and thin areas of coating should be identified for repair using a distinctive marker pen. Repair by abrading the defect and 2-inch radius of surrounding coating that will be the overlap zone.

Clean the prepared area with xylene before application of the repair.

Concrete substrate: Checking the DFT and identifying defects and pinholes

during application of **HEGGEL Corr 270** on concrete surfaces is essential as the coating is electrical conductivity and so cannot be checked for pinholes once dry. It is advised that a robust quality control procedure be followed during coating application and if possible, a minimum of 2 coats to be applied to ensure a defect free coating.

7. Cure Schedule

Coating is touch dry after ~ 240 minutes at 20°C. Unless stated otherwise allow a minimum period of 7 days to reach full cure before exposing to a chemical load. For decontamination or to maximise chemical resistance the coating surface can be exposed to hot air blowers or 100°C steam after the 7-day ambient cure.

8. Recommended System

Internal coating of process vessels and equipment:

2-3 coats @ 800 - 1000 microns total DFT

Exterior coating of pipes and equipment:

2 coats @ 400 - 500 microns total DFT

Concrete surfaces:

2-3 coats @ 800 - 1000 microns total DFT

Use of carbon/synthetic matting is recommended to reinforce concrete and stop it cracking especially if temperature loads/fluctuations are encountered.

9. Dry Film Thickness

The Dry Film Thickness range mentioned in this Technical Datasheet is considered based on typical applications and requirements. However, based on the process conditions and customer requirements, we are able to customize the product that it could be applied in thicknesses other than the mentioned range.

Therefore, we strongly advise a consultation with **HEGGEL GmbH**.

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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.

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