

# HEGSEL® Corr 270

Graphite-Enhanced Phenolic Coating

*You Build, We Protect!*

**Description:**

**HEGSEL Corr 270** is a solvent-free, graphite-modified phenolic lining designed for ultra-high chemical resistance, particularly against concentrated organic and mineral acids, with a specific emphasis on concentrated hydrofluoric acid at elevated temperatures up to 100°C. **HEGSEL Corr 270** is an ideal choice for protecting components that transport fluorinated acids, including hydrofluoric acid. The maximum operating temperature of this advanced coating system varies depending on the specific chemical application, ensuring tailored protection for a range of aggressive substances.

**Characteristics:**

- Exceptional resistance to concentrated organic and mineral acids, particularly against hydrofluoric acid
- Suitable for use at temperatures up to 180°C in acidic vapors
- Electrically dissipating
- Ambient curing
- Applicable to both metallic and concrete surfaces

**Application Areas:**

- Internal lining of pickling tanks, process vessels, and associated piping
- Suitable for concrete substrates in secondary containment areas

**Chemical Resistance:**

- Hydrofluoric acid 70%
- Hydrochloric acid 37%
- Glacial acetic 100%
- Phosphoric acid 84%
- Sulphuric acid 98%
- Chromic acid 40%
- Nitric acid 50%

**Application Data:**

<b>Finish</b>	Glossy	
<b>Colour</b>	Black	
<b>Number of Coats</b>	2 - 3	
<b>Practical Consumption</b>	Approx. 2.5 kg/m <sup>2</sup> @1000 microns DFT	
<b>Typical Dry Film Thickness</b>	1000 microns	
<b>@Temperature</b>	<b>20°C</b>	<b>30°C</b>
<b>Pot Life (Brush Application)</b>	40 min	20 min
<b>Tack Free / Drying Time</b>	240 min	-

**Note 1:** The practical consumption and DFT are subject to specific project conditions and will adjust accordingly to ensure optimal results. Please consult HEGSEL!

**Note 2:** All the provided values are approximate and should be used as guidelines for specifications.

**Technical Data:**

Title	Standard	Value
<b>Density (Mix)</b>	-	1.50 g/cm <sup>3</sup>
<b>Mixed Viscosity</b>	20°C	50,000 ± 5,000 mPa.s
<b>Solids Content</b>	-	100%
<b>Abrasion Resistance</b>	ASTM D4060 (Taber CS-17/1kg/1000 cycles)	32 mg weight loss
<b>Adhesion Strength</b>	ASTM D4541	16 MPa (cohesive failure)
<b>Elongation to Break</b>	BS 6319 Part 7 1985	1 %
<b>Impact Resistance</b>	ASTM G14	Forward: 5 Joules Reverse: 2 Joules
<b>Temperature Resistance</b>	NACE TM0174	Immersed: +100°C Non-Immersed: +200°C

**Packaging:**

2.5 kg kits

**Storage:**

12 months in sealed original tins under dry and cool conditions.  
Protect from heat and freeze!

## 1. Surface Preparation

To obtain the best results commence by grit blasting the surface to strip off the previous coating, followed by high-pressure water jet cleaning to cleanse any surface chemical contaminants and soluble salts.

Let the substrate dry and then re-blast the surface with angular grit to achieve a minimum blast profile of 75 microns and attain an SA 2.5 level of surface cleanliness. Clear away any remaining dust and grit. In cases where the surface has been immersed in salt water it requires grit blasting, a 24-hour rest period, and then a fresh water rinse before undergoing another blast. New surfaces should be Meticulously degreased prior to the final grit blast. Immediate coating of the prepared surface is crucial to prevent oxidation and contamination.

## 2. Mixing

To ensure optimal performance of the product, thorough mixing is essential. Make sure both base and hardener components are kept below 30°C before mixing and always keep the materials in a shaded area before, during and after mixing. Upon opening the base tin, any substance on the lid must be incorporated into the tin. Gradually incorporate the hardener into the base, ensuring a slow stirring motion with the power mixer. Once the entirety of the hardener has been seamlessly added, elevate the power mixer's speed to its maximum. Proceed with this for an additional 2 minutes, while concurrently using a sturdy spatula or palette knife to scrape the interior walls of the container. This method ensures comprehensive blending of all materials.

The usability of the mixed material lasts for a duration approximately equal to the pot life. Refrain from mixing a quantity of material that exceeds what can be used within the pot life span. Do not mix more material than can be used within the pot life period.

## 3. Environmental Conditions

Prior to the application of the coating, make sure that the temperature of the surface is no less than 18°C, the temperature of the air is at least 3°C above the dew point, and ensure the relative humidity is less than 80%. Be careful to prevent recontamination of the surface which is prepared from close sources. Avoid applying the coating in windy conditions unless there is no other choice.

## 4. Application Tools

Application of the mixture can be performed using a brush with stiff bristles, not exceeding 5 cm in length.

## 5. Application

Apply **HEGGEL Corr 270** (Brush Grade) by firmly pressing it into the substrate for thorough surface wetting, then build up the coating to the specified thickness of 1000 microns, in two or three coats. Frequently monitor the wet film thickness with the help of a wet film thickness gauge particularly when dealing with concrete substrates where it is not feasible to measure DFT. Immediately after applications, clean the brush using MEK or acetone-based thinners. For a second coat of **HEGGEL Corr 270** (Brush Grade), wait 6 hours before proceeding with the application.

## 6. Quality Control

### Steel Substrate:

After 24 hours of application, check the continuity of the applied coating using a Wet Sponge holiday detector set at an operating voltage of 90V DC. Ensure thorough wetting of the coated surface by repeatedly passing the sponge over it. Use an inductance type electronic dry film thickness tester for a quantitative measure of the dry coating thickness.

24 hours after application inspect the integrity of the coating applied with a 90V DC Wet Sponge holiday detector. Make sure that the coated surface is completely soaked by repeatedly running the sponge across it. An inductance type electronic dry film thickness tester can be employed to provide a quantitative assessment of the dry coating thickness.

### Concrete Substrate:

It is crucial to monitor the Dry Film Thickness (DFT) and identify any defects or pinholes while applying **HEGGEL Corr 270** on concrete surfaces. Since this coating is electrically conductive, pinholes cannot be detected after it dries. A rigorous quality control process should be implemented during the application. If feasible, apply a minimum of 2 coats to guarantee a coating free of defects.

## 7. Repairing Defects

If the coating has been applied 25% beneath specification, repairs should be made. Use a distinctive marker pen to identify pinholes, misses, and areas with thin coating for repair. Any loose material surrounding the defect must be removed to leave behind firmly adhered coating. Subject the defect to spot grit blasting until the bare metal surfaces with at least SA 2.5

cleanliness and a minimum profile of 75 microns is achieved. Also, it is imperative to sweep blast 5 cm of the surrounding sound coating to create a rough surface as repair overlap. Prior to applying the repair of **HEGGEL Corr 270** clean the blasted area with xylene. Brush firmly into the surface profile to ensure complete wet out and then build to required thickness in a single coat. Apply the repair mix firmly into the surface profile with the brush to guarantee complete wet out, subsequently building to the needed thickness in a single layer.

## 8. Curing Time Schedule

After approximately 240 minutes the applied coating would be touch dry at 20°C. A minimum curing period of 7 days at 20°C should be provided before exposing to a chemical load. To decontaminate or enhance chemical resistance, the coating surface may be subjected to hot air blowers or 100°C steam following a 7-day ambient curing period.

## 9. Recommended Coating System

- Internal coating of process vessels and equipment:
  - Apply 2-3 coats with a total dry film thickness (DFT) of 800 - 1000 microns
- Exterior coating of pipes and equipment:
  - Apply 2 coats with a total dry film thickness (DFT) of 400 - 500 microns.
- Concrete surfaces:
  - Apply 2-3 coats with a total dry film thickness (DFT) of 800 - 1000 microns. it is recommended to utilize carbon/synthetic matting for reinforcing concrete and preventing cracks, particularly in conditions involving temperature loads or fluctuations.

**Note:** Values here are general guidelines only. As Dry Film Thickness (DFT) determination varies with project-specific conditions and requirements, consult HEGGEL for precise application accuracy.

## 10. Safety Measures

Ensure sufficient ventilation during the mixing of product components and while applying the product, particularly in enclosed spaces like pits and vessels. Continuously extract all vapours produced during the process using a positive suction system located near the floor of the pit or vessel. 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.

**HEGGEL Corr 270**; Revision No: 1.10 / Last Revision Date: 20.09.2023

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.

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