

# HEGGEL® Corr 290

Advanced Phenolic Hybrid Lining

*You Build, We Protect!*

**Description:**

**HEGGEL Corr 290** an innovative, modified phenolic hybrid coating system, is meticulously formulated to provide protection for equipment involved in the conveyance of nitric acid and more specifically, oxygenating chemicals at both ambient and elevated temperatures. The maximum operational temperature resistance depends on the specific chemicals in use.

**Characteristics:**

- Solvent-free
- Exceptional chemical resistance, withstanding oxygenating chemicals, concentrated nitric acid / organic acids
- Ambient curing coating
- Applicable both on metallic and concrete substrates
- Temperature resistance up to 100°C and can be used up to 180°C in acid vapours

**Application Areas:**

- Chemical tanks and process vessels
- Pickling tanks
- Concrete walls/floors in secondary containment areas
- Pipelines

**Chemical Resistance:**

- Nitric Acid 70%
- Hydrochloric acid 37%
- Glacial acetic 100%
- Phosphoric acid 84%
- Chromic acid 30%

**Application Data:**

<b>Finish</b>	Semi-Gloss	
<b>Colour</b>	Beige and Grey	
<b>Number of Coats</b>	1 - 2	
<b>Practical Consumption</b>	Approx. 2 kg/m <sup>2</sup> @ 1000 microns DFT	
<b>Typical Dry Film Thickness</b>	1000 microns	
<b>Recommended Dry Film Thickness (DFT)</b>	Internal coating of process vessels and equipment: 1 coat @ 1000-1200 microns DFT Concrete substrate: 2 coats @ 800 - 1000 microns DFT	
<b>@Temperature</b>	<b>20°C</b>	<b>30°C</b>
<b>Pot Life</b>	45 min	30 min
<b>Tack Free / Drying Time</b>	240 min	-

**Note:** The practical consumption is subject to specific project conditions and will be determined accordingly to ensure optimal results. Please consult HEGGEL!

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

**Technical Data:**

Title	Standard	Value
<b>Density (Mix)</b>	-	1.30 g/cm <sup>3</sup>
<b>Solids Content</b>	-	100%
<b>Mixed Viscosity</b>	20°C	30,000 ± 5,000 mPa.s
<b>Abrasion Resistance</b>	ASTM D4060 (Taber CS-17/1kg/1000 cycles)	65 mg weight loss
<b>Impact Resistance</b>	ASTM G14	Forward: 6 Joules Reverse: 3 Joules
<b>Adhesion Strength</b>	ASTM D4541	19 MPa (cohesive failure)
<b>Elongation to Break</b>	BS 6319 Part 7 1985	1%
<b>Temperature Resistance</b>	NACE TM0174	Immersed: +100°C Non-Immersed: +180°C

**Packaging:**

10 kg and 20 kg kits

**Storage:**

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

## 1. Surface Preparation

Thorough preparation of the substrate is crucial for ensuring the enduring performance of this product. To achieve superior results, an initial step of grit blasting should be undertaken to remove the existing coating system. Subsequently, the metallic surface should undergo treatment with a water-based alkaline degreaser and then be scrubbed using a stiff bristled sweeping brush. High-pressure water jetting can then be employed to remove the applied degreaser. This procedure may require repetition, particularly on vessel floors, to effectively eliminate any surface chemical, grease contamination, and soluble salts. Let the substrate dry and then grit blast the substrate with angular grit to achieve a blast profile of a minimum of 75 microns, according to the Standard SA 2.5. Any residual dust and grit should be meticulously removed. The next step involves testing for soluble salts, with the aim of achieving a chloride level below 18 mg/sqm. In cases where this level is exceeded, it is advised to repeat the washing process and allow for drying before conducting another round of sweep blasting and retesting. Once the surface has been adequately prepared, it is important to promptly proceed with the coating application. Throughout the work within confined spaces, an operational air extraction system is mandatory. This ensures clear visibility for the operator and prevents dust-induced recontamination of the prepared surface.

## 2. Mixing

To ensure optimal performance of the product, thorough mixing is essential. Make sure both base and hardener components are kept between 15 - 20°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 by the power mixer with helical paddle 1/3 diameter of the tin diameter. 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 3 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.

## 3. Environmental Conditions

Prior to the application of the coating, make sure that the temperature of the surface is no less than 20°C, the temperature of the air is at least 3°C above the dew point, and ensure the relative humidity is less than 80%. In case the substrate's temperature falls below 20°C, it may be necessary to use external heating to elevate the ambient temperature and subsequently heat the substrate. For outdoor applications, create an enclosure around the equipment to be coated using plastic sheeting and then pump warm air into this enclosed area. 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; in these instances, encase the equipment in plastic sheeting as mentioned earlier.

## 4. Application Tools

**Brush Grade:** Application of the mixture can be performed using a medium-sized brush featuring natural bristles, with a width of 7.5 cm, and a brush head length that does not exceed 6.5 cm.

**Spray Grade:** Utilize a single-component 63:1 airless spray unit with a 30 - 35 thou reversible fluid tip for a 60° fan angle. Remove all internal filters in the pump and spray gun. Use a 500 bar-rated high-pressure spray gun. The pump's seals and packing should be optimal, with pump and hose free of old dry coating. Operate at 5000 psi for ideal spray characteristics. Avoid using a rubber suction hose for the conveyance of coating from the tin to the pump. Position the tin of mixed coating directly beneath the pump, continually replenishing it with fresh coating as needed.

## 5. Application

Apply a stripe coat to corners, edges, and welds. Objects that are challenging to access must be thoroughly coated using a brush. Following the brush application, allow it to dry and then perform a sweep blast. Proceed to apply **HEGGEL Corr 290** onto the metal surfaces, ensuring all stripe coated regions are covered. Implement the specified film thickness in a single, uniform layer. 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.

It is advised to reinforce concrete and

prevent cracking, particularly in the presence of temperature variations or loads.

## 6. Quality Control

24 hours after application on steel surface, inspect the integrity of the applied coating utilizing a holiday detector, set at an operating voltage of 40V (DC) for every 25 microns of coating thickness. An inductance type electronic dry film thickness tester can be employed to provide a quantitative assessment of the dry coating thickness.

## 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 290** 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 5 days should be provided before exposing to a chemical load. For the purposes of surface decontamination or maximization of chemical resistance, the coating can be exposed to hot air after the 5-day ambient cure.

## 9. Safety Measures

Ensure proper ventilation when working inside the vessel during grit blasting and coating application. Continuously extract dust and vapors produced during the process with a positive suction system located near the vessel's roof. 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.

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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.

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