

# HEGGEL® Corr 244

High-Pressure Immersion Service Phenolic Coating

*You Build, We Protect!*

**Description:**

**HEGGEL Corr 244** is a two-component solvent-free modified phenolic cyclic polymer coating known for its excellent resistance, specifically tailored for equipment subjected to high-pressure process fluids and gas mixtures. This coating is ideal for gas pressure / separator vessels and down-hole tubulars. **HEGGEL Corr 244** rapidly cures to form a smooth, highly abrasion-resistant finish, enhancing fluid flow and preventing the build-up of paraffin, asphaltene, and scale. Its extraordinary adhesive strength, exceeding 29 MPa, along with its resistance to gas permeation, enables it to endure explosive decompression cycles.

**Characteristics:**

- Outstanding resistance for equipment subjected to high-pressure processes
- High abrasion and impact resistance
- High temperature resistance, withstanding up to 180 °C in dry heat and 130 °C in gas-immersed conditions
- Self-priming, single-layer system with strong adherence to metal surfaces
- Withstands explosive decompression
- Exceptional resistance to hydrocarbons, water, acids and solvents

**Application Areas:**

- Internals of pressure / separator vessels, handling sour gas, water, CO<sub>2</sub>, and hydrocarbon mixtures at elevated temperatures and pressures
- Production tubing, seawater, and gas injection lines
- Flow lines and downhole equipment

**Chemical Resistance:  
(Full Immersion)**

- Sulphuric acid 90%
- Hydrochloric acid 37%
- Glacial acetic 50%
- Phosphoric acid 84%
- Nitric acid 30%
- NaOH 50%
- Sodium hypochlorite 15%
- Hydrocarbons and sweet / sour crude
- Gases rich in H<sub>2</sub>S, CO<sub>2</sub> and water vapour
- MEK, toluene, xylene, acetone, ammonia
- Mono-ethylene glycol and homologous derivatives
- Any chemical solution rich in chlorides or sulphates
- Water

**Application Data:**

<b>Finish</b>	Matt		
<b>Colour</b>	Grey, black and green		
<b>Number of Coats</b>	1		
<b>Practical Consumption</b>	~ 1.25 kg/m <sup>2</sup> @ 500 microns DFT		
<b>Typical Dry Film Thickness</b>	500 - 1000 microns		
<b>Temperature</b>	<b>20 °C</b>	<b>30 °C</b>	<b>40 °C</b>
<b>Pot Life</b>	20 min	15 min	10 min
<b>Tack Free / Drying Time</b>	120 min	-	-

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

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

**Technical Data:**

Title	Standard	Value
<b>Solids Content</b>	-	100%
<b>Density (Mix)</b>	-	1.4 g/cm <sup>3</sup>
<b>Viscosity (Mix) @20 °C</b>	-	20,000 ± 5,000 mPa.s
<b>Abrasion Resistance</b>	ASTM D4060 (Taber CS-17/1kg/1000 cycles)	12 mg weight loss
<b>Impact Resistance</b>	ASTM G14	Forward: 10 Joules Reverse: 3 Joules
<b>Adhesion Strength</b>	ASTM D4541	≥ 29 MPa (Cohesive failure)
<b>Temperature Resistance</b>	NACE TM0174	Immersed: 130 °C Non-Immersed: 180 °C
<b>Autoclave Test</b>	NACE TM0185 Temperature: 130 °C, Pressure: 7500 psi, Fluids: Sour Crude / acidified seawater (50% / 50%), Gas: Methane / CO <sub>2</sub> (85% / 15%), Decompression Rate: 625 psi per minute	Results: Pass with no delamination / blisters

**Packaging:**

10 kg kits

**Storage:**

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

## 1. Surface Preparation

For optimum results, surfaces shall be cleaned to remove all existing coatings, oil contamination, chemical residues, and soluble salts. Abrasive blasting using angular grit shall be performed to achieve a minimum surface profile of 75 microns and a surface cleanliness level of Sa 2.5 in accordance with ISO 8501-1. Soluble salt contamination, particularly chlorides, must not exceed 18 mg/m<sup>2</sup>. Remove all residual dust and abrasive particles, and apply the coating immediately after surface preparation to avoid contamination or oxidation.

### Old Vessels / Pipes for Hydrocarbon Service:

Commercial grit blasting shall be carried out to remove existing coatings and corrosion by-products. Surfaces should then be cleaned using an alkaline water-based degreaser followed by high-pressure water jetting with potable or deionized water to remove oil residues and embedded contaminants. The cleaning procedure should be repeated as necessary, particularly on vessel floors and low points where hydrocarbon contamination may accumulate.

### New Vessels:

New vessels should be thoroughly degreased using an alkaline water-based cleaner and washed with fresh or deionized water prior to final abrasive blasting. Cleaning should proceed from the upper sections downward while maintaining open drain points to prevent contaminated wastewater accumulation. Vessel floors and low areas should be thoroughly cleaned and washed at least twice before final surface preparation and coating application.

## 2. 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.

## 3. Application Tools

**Brush:** The mixture can be applied using a stiff bristle brush, ~ 7.5 cm in width and not

exceeding 5 cm in length. If you are using a new brush, ensure to condition it by forcefully bending and yanking the bristles to eliminate any loose ones. This step is significant to avert the coating from being contaminated by bristles while the application is taking place.

**Spray:** Utilize a single-component airless spray unit with a 63:1 ratio, equipped with a 21 thou reversible fluid tip and a fan angle of approximately 60° or nearby.

**Note:** HEGGEL Corr 244 can also be applied using conventional pipe spraying equipment in combination with a heated plural-component feed system.

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

## 5. Application

Apply HEGGEL Corr 244 in a single-coat, building it up to the specified film thickness. Ensure not to exceed the recommended film thickness. Frequently monitor the wet film thickness with the help of a wet film thickness gauge.

**Note:** Immediately after completion of the application, all spray equipment, including spray hoses, must be thoroughly cleaned using acetone or MEK-based solvents to prevent material curing within the system.

## 6. Quality Control

Approximately 12 hours after application, inspect the continuity of the applied coating using a wire brush high voltage spark tester set at 800-1000V. Dry film thickness (DFT)

measurements may be carried out using an inductance-type electronic dry film thickness gauge to verify compliance with the specified coating thickness.

## 7. Repairing Defects

Pinholes, holidays, and areas with insufficient coating thickness shall be identified and marked for repair. Defective areas should be spot blasted to achieve a minimum surface profile of 75 microns. Additionally, sweep blasting or feathering of the surrounding sound coating within a radius of approximately 5 cm shall be carried out to ensure proper overlap and adhesion of the repair coating. For inaccessible internal pipe sections, the entire coated surface should be sweep blasted followed by the application of an additional coat.

## 8. Curing Time Schedule

The applied coating becomes touch dry after approximately 120 minutes at 20 °C. Unless otherwise specified, allow a minimum curing period of 24 hours at 20°C before performing quality control inspections and repairing any defects.

Following repairs, re-inspect the coating after an additional 24 hours. If no further defects are detected, allow the coating to cure for a minimum of 5 days prior to placing the equipment into service.

## 9. Recommended Coating System

- Internal coating of process vessels, tanks, pipes and equipment: Single coat @ 500 - 1000 microns DFT.
- Concrete surfaces: Single coat @ 400 – 600 microns. Apply a HEGGEL Corr Sealer to strengthen and seal concrete. For precise selection of the appropriate sealer based on the project conditions, please contact HEGGEL. Allow to dry, sweep blast and apply HEGGEL Corr 244 as top coat.

**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

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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