

HEGSEL® Corr 240

High-Pressure Tolerant Modified Phenolic Coating

You Build, We Protect!

Description:

HEGSEL Corr 240 is a solvent-free phenolic epoxy-based 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. **HEGSEL Corr 240** 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 4200 psi, 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 150°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

Applications Areas:

- Internals of pressure/separator vessels, water, CO₂, and hydrocarbon mixtures at elevated temperatures and pressures
- Production tubing, seawater, and gas injection lines
- Flow lines and downhole equipment

Chemical Resistance:

- Sulphuric acid 90%
- Hydrochloric acid 37%
- Glacial acetic 50%
- Phosphoric acid 84%
- Nitric acid 30%
- Sodium hypochlorite 15%
- MEK, Toluene, Xylene, Acetone, Ammonia
- Sweet and sour crude
- Any chemical solution rich in chlorides or sulphates

Application Data:

Finish	Matt		
Colour	Grey, White and Black		
Number of Coats	1		
Practical Consumption	Approx. 0.55 kg/m ² @200 microns DFT		
Typical Dry Film Thickness	200 microns		
@Temperature	20°C	30°C	40°C
Pot Life	60 min	40 min	25 min
Tack Free / Drying Time	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 HEGSEL!

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

Technical Data:

Title	Standard	Value
Density (Mix)	-	2 g/cm ³
Mixed Viscosity	20°C	18,000 ± 5000 mPa.s
Solids Content	-	100%
Abrasion Resistance	ASTM D4060 (Taber CS-17/1kg/1000 cycles)	12 mg weight loss
Adhesion Strength	ASTM D4541	30.4 MPa (Cohesive failure)
Impact resistance	ASTM G14	Forward: 10 Joules Reverse: 3 Joules
Temperature Resistance	NACE TM0174	Immersed: 150°C Non-Immersed: 180°C
Autoclave Test	NACE TM0185 Temperature: 130°C, Pressure: 7500 psi, Fluids: Sour Crude / acidified seawater (50% / 50%), Gas: Methane / CO ₂ (85%/15%), Decompression Rate: 625 psi per minute	Results: Pass with no delamination / blisters

Packaging:

2 kg and 5 kg kits

Storage:

36 months in sealed original tins under dry and cool conditions at temperatures 5 - 30°C. 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 15°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 15°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: The mixture can be applied using a stiff bristle brush, approx. 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 Grade: Utilize a single-component airless spray unit with a 63:1 ratio, equipped with a 19 thou reversible fluid tip and a fan angle of approximately 60° or near. This can also be applied with standard pipe spraying equipment.

5. Application

Apply a stripe coat to corners, edges, and welds. Apply **HEGGEL Corr 240** 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. After applications, clean the spray equipment using MEK or acetone-based thinners. In hot climates, if the equipment is used continuously, it must be cleaned every 60 minutes before resuming spraying. After cleaning, it can operate for another uninterrupted 60 minutes, and this cycle should be repeated as needed.

6. Quality Control

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.

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 240** 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. Areas that are too thick should be sanded down to meet the specified thickness.

8. Curing Time Schedule

After approximately 120 minutes the applied coating would be touch dry at 20°C. A minimum curing period of 3-4 days at 20°C should be provided before exposing to a chemical load. To enhance the coating's performance after ambient curing, expose it to steam at 100°C.

9. Recommended Coating System

- Internal coating of gas pressure / separator vessels and down-hole tubulars:
Single coat @175-225 microns DFT.
- Internal coating of oil/water pressure / separator vessels:
Single coat @800 microns DFT.
- Internal coating of cyclones
Single coat @1000 microns DFT.

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.

HEGGEL Corr 240; 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.

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