

HEGSEL® Corr 210

High-Tech Chemical-Resistant Coating

You Build, We Protect!

Description:

HEGSEL Corr 210 is a two-component hybridised epoxy High-Tech coating, providing special chemical resistance in temperatures ranging from -70°C to +190°C when immersed and up to +250°C when not immersed. This advanced, solvent-free coating is the result of cutting-edge technologies that seamlessly integrate organic and inorganic molecules at a molecular level. This unique blend delivers remarkable thermal stability and creates a highly crosslinked structure, granting an unparalleled level of chemical resistance. The cured coating not only excels in sliding abrasion resistance but also boasts a smooth finish that improves fluid flow and mitigates sludge build-up. **HEGSEL Corr 210** can be effectively cleaned using high-temperature steam.

Characteristics:

- Exceptional chemical resistance across a wide spectrum
- Highly resistant to fouling
- Withstands thermal cycling effectively
- Exceptional mechanical properties
- High-temperature resistance up to 190°C in immersed and 250°C in non-immersed conditions
- Resistant against Corrosion Under Insulation (CUI)
- Solvent-free, single-coat curing at ambient temperature

Application Areas:

- Chemical tanks, Process vessels
- Heat exchangers
- Internal coating of pipe-work and valves
- External coating for equipment over wide temperature ranges, ideal for insulated pipes/spools prone to CUI
- Condensers, evaporators
- Distillation units
- Autoclaves
- Scrubber units
- Sulphur recovery units
- Applicable on hot surfaces during operation

Chemical Resistance:

- Sulphuric acid 98%
- Hydrochloric acid 37%
- Glacial acetic 100%
- Nitric acid 50%
- Methylene chloride, Vinyl chloride, Benzyl chloride
- Carbon Disulphide
- Molten Sulphur + acidic vapour
- Conc. Methanol, ethanol and derivatives
- Sodium hypochlorite, sodium perchlorate
- 50-75% Sodium hydroxide

Application Data:

Finish	Glossy		
Colour	Dark Brown, Black, Grey, Red		
Number of Coats	1		
Practical Consumption	Brush grade: Approx. 2.2 kg/m ² @800 microns DFT Spray grade: Approx. 2.5 kg/m ² @800 microns DFT		
@Temperature	20°C	30°C	40°C
Pot Life	Brush: 65 min Spray: 75 min	Brush: 45 min Spray: 50 min	Brush: 25 min Spray: 30 min
Tack Free / Drying Time	Brush: 150 min Spray: 160 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)	-	1.80 g/cm ³
Mixed Viscosity Brush grade	20°C	40,000 ± 5,000 mPa.s
Mixed Viscosity Spray grade	20°C	20,000 ± 5,000 mPa.s
Solids Content	-	100%
Abrasion Resistance	ASTM D4060 (Taber CS-17/1kg/1000 cycles)	20 mg weight loss
Impact Resistance	ASTM G14	Forward: 13 Joules Reverse: 3 Joules
Adhesion Strength	ASTM D4541	29.3 MPa (cohesive failure)
Temperature Resistance	NACE TM0174	Immersed: +190°C Non-Immersed: +250°C

Packaging:

Brush grade: 3 kg kits, Spray grade: 5 and 15 kg kits

Storage:

+36 months in sealed original containers 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.

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: Application of the mixture can be performed a stiff natural bristle brush, with a width of approx. 7.5 cm and bristles 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°.

5. Application

Apply a stripe coat to corners, edges, and welds. For Spray Grade, initiate the wet on wet application of **HEGGEL Corr 210** by applying onto the stripe coat and build up to the specified film thickness in a single coat. For Brush Grade, apply **HEGGEL Corr 210** by firmly brushing into the substrate to ensure surface wet out and then proceed to form the specified film thickness in a single 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. The equipment / tools after coating should be immediately cleaned with MEK or acetone-based thinners. However, if the equipment is used in hot climates for a lengthy period, then it must be cleaned after every 60 minutes before spraying can re-commence. Once cleaned it can be used for a further 60 minutes without stopping and so on.

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 alternative approach involves utilizing a wire brush high voltage spark tester set at 800-1000 V. 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 210** 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 150 -160 minutes the applied coating would be touch dry at 20°C. A minimum curing period of 3-4 days should be provided before exposing to a chemical load. For the purposes of surface decontamination or to improve chemical resistance, the coating can be exposed to 130°C steam after a 3-4 day ambient cure.

9. Recommended Coating System

- Internal coating of process vessels, pipes and equipment:
Single coat @ 600 - 800 microns DFT.
- Exterior coating of high temperature pipes and equipment:
Single coat @ 200 - 300 microns DFT.
- Exterior coating of pipes and equipment operating at sub-ambient temperatures:
Single coat @ 300 - 400 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.

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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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