

HEGSEL® Corr 220 AF

Advanced Anti-Fouling Chemical Resistant Coating

*You Build, We Protect!***Description:**

HEGSEL Corr 220 AF represents an innovative nano-technology-based coating, enriched with advanced fillers and designed with anti-fouling properties. It is meticulously engineered for the protection of components frequently exposed to highly aggressive chemicals, particularly in the chemical industry. This coating is notable for its superior chemical and fouling resistance at elevated temperatures. With its exceptional adhesion properties, **HEGSEL Corr 220 AF** is ideal for use on steel and concrete surfaces, especially in extensive secondary containment areas.

Characteristics:

- Ultra-High resistance to full immersion in concentrated organic/mineral acids, alkalis, and solvents at both room and elevated temperatures
- Self-priming single-coat application
- Prevents fouling and sludge build up
- Cures at ambient temperature
- Exceptional adhesion strength
- Outstanding abrasion resistance

Applications:

- Chemical storage tank / process vessel internal linings
- Internal pipe lining
- Road / sea chemical tankers
- External coating for insulated pipes, operating at sub-ambient temperatures
- Secondary containment areas
- Concrete walls / floors

Chemical Resistance:

- Sulphuric acid 98%
- Hydrochloric acid 37%
- Glacial acetic 100%
- Methylenechloride
- Carbon Disulphide
- Phosphoric acid 84%
- Nitric acid 40%
- Sodium hydroxide 50%
- Tetrahydrofuran
- Monoethanolamine
- Sodium hypochlorite 15%
- Hydrazine
- Methyldiethanolamine (MDEA)
- Diglycolamine (DGA)

Application Data:

Finish	Glossy		
Colour	Black, Red and Grey		
Number of Coats	1		
Practical Consumption	Approx. 0.6 kg/m ² @ 300 microns DFT		
Recommended Dry Film Thickness (DFT)	<ul style="list-style-type: none"> • Internal coating of process vessels, tanks, pipes and equipment: Single coat @ 200-300 microns DFT. • Concrete surfaces: Single coat @ 300 – 400 microns. Apply HEGSEL Corr 220 AF (Sealer) to seal to strengthen and seal concrete before applying top coat. • Vessel and pipe externals operating at sub ambient and elevated temperature: Single coat @ 200 - 300 microns DFT. 		
@Temperature	20°C	30°C	40°C
Pot Life	65 min	50 min	30 min
Tack Free / Drying Time	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)	-	1.10 g/cm ³
Solids Content	-	100%
Viscosity (Mix)	20°C	15.000 ± 5.000 mPa.s
Abrasion Resistance	ASTM D4060 (Taber CS-17/1kg/1000 cycles)	26 mg weight loss
Impact Resistance	ASTM G14	Forward: 10 Joules Reverse: 3 Joules
Adhesion Strength	ASTM D4541	30.9 MPa (cohesive failure)
Elongation to break	BS 6319: Part 7: 1985	1.5%
Tensile Strength	BS 6319: Part 7: 1985	40 MPa
Elastic Modulus	BS 6319: Part 2: 1983	10 GPa
Compressive Strength	BS 6319: Part 2: 1983	120 MPa
Temperature Resistance	NACE TM0174	Immersed: +130°C Non-Immersed: +150°C

Packaging:

5 kg and 15 kg kits

Storage:

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

1. Surface Preparation

Proper surface preparation is essential for the long-term performance of this product. For best results, the surface should be grit-blasted to remove corrosion or any old, damaged coating. Start by scrubbing the surface with a water-based alkaline degreaser, then rinse off the degreaser using high-pressure water jetting. This process may need to be repeated, especially on vessel floors. Once the substrate is dry, proceed with grit blasting using angular grit. Remove any remaining dust and grit. The blast profile should be at least 75 microns, with a cleanliness level of SA 2.5, dust level 1, and chloride salts below 18 mg/m². Once the surface is fully prepared, it must be coated immediately. During both surface preparation and coating, ensure air extraction is in operation to prevent fine dust from obstructing the operator's vision and to avoid recontamination of the prepared surface with dust.

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. 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.

3. Application Tools

Use a single-component airless spray unit with a pressure ratio of 63:1 or higher. Equip it with a 23-27 thou reversible fluid tip to produce a spray fan angle of

approximately 60°. Ensure all internal filters are removed from both the pump and spray gun. The high-pressure spray gun must be rated for at least 500 bar. Check that the pump seals and packing are in excellent condition. Operate the equipment at 5000 psi to achieve optimal spray performance. Avoid using a rubber suction hose to transfer the coating from the container to the pump. Instead, place the mixed coating tin directly under pump and keep on topping up same tin with fresh coating.

4. Mixing

To ensure optimal performance of the product, thorough mixing is essential. Make sure both base and hardener components are kept around 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 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.

5. Application

Apply a stripe coat to all corners, edges, and welds. For hard-to-reach areas, ensure full coverage using a brush. Allow the coating to dry, then perform a sweep blast. Apply **HEGSEL Corr 220 AF** to the metal surfaces, including the stripe-coated areas. Ensure the specified film thickness is applied in a single coat. Regularly check the wet film thickness using a wet film thickness gauge, particularly on concrete substrates where dry film thickness (DFT) measurements are not feasible.

Avoid applying the coating to any areas contaminated with dry or semi-dry overspray. To protect uncoated surfaces from overspray, cover them with plastic sheets until they are ready for full coating. If any surfaces become contaminated with dry overspray, they must be sweep blasted before applying the full coat. After coating, promptly clean the spray pump, hoses, spray gun, and tip using MEK or acetone.

6. Quality Control

12 to 24 hours after application, inspect the continuity of the coating using a wire brush-type high-voltage spark tester set to 800-1000V. To measure the dry coating thickness, use an inductance-based electronic dry film thickness tester for accurate, quantitative results.

7. Repairing Defects

Identify pinholes, missed spots, and thin areas of the coating for repair by marking them with a distinct marker. For repairs, spot blast the defect down to bare metal, ensuring a surface profile of at least 75 microns. Additionally, sweep blast and feather a 2-inch radius around the sound coating to ensure proper overlap during the repair. Clean the prepared area with xylene before applying the repair coating.

8. Curing Time Schedule

After approximately 160 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 achieve maximum chemical resistance, expose the coating to hot air at +70°C for 12 hours following the 3 - 4 day ambient curing period, and prior to placing it into service.

9. 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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