

# HEGGEL® Coat 111

High-Performance Corrosion Protection Epoxy Coating

*You Build, We Protect!*

**Description:**

**HEGGEL Coat 111** is a two-component epoxy coating, comprising micro-ceramic particles within a cutting-edge Novolac-resin base, exhibiting outstanding corrosion protection properties.

**HEGGEL Coat 111** is a cost-effective coating solution with superior abrasion resistance, specifically designed to protect steel structures from corrosion-induced deterioration. Application of **HEGGEL Coat 111** can be done through airless spray equipment, allowing for a high-build, single-coat application. However, multiple applications are also possible. Its unique formulation eliminates the need for a primer, though an epoxy zinc primer can be applied if necessary. For manual applications, the specially formulated **HEGGEL Coat 122** is recommended, which is optimized for hand application.

**Characteristics:**

- VOC < 1%
- Exceptional corrosion protection
- Remarkable adhesion strength
- Ambient curing coating
- Consistent temperature resistance up to 100°C for non-immersed conditions and short-term resistance up to +150°C
- Superior resistance to abrasion
- High impact resistance
- No shrinkage due to plasticizer migration
- Free from heavy metals, benzyl alcohol, coal tar, anthracene oil, and plasticizers
- High resilience to early water stress

**Application Areas:**

- Industrial and marine structures / Offshore platforms
- Water, seawater, brackish water equipment
- Flood gates, steel sheet piles and weir plants
- Crude oil, hydrocarbons, and chemicals Storage tanks
- All types of process vessels
- Oil and gas pipelines

**Application Data:**

|  |  |                             |                             |
|--|--|-----------------------------|-----------------------------|
| <b>Mixing Ratio (Parts by Weight)</b>  | A : B = 7 : 1  |                             |                             |
| <b>Finish</b>  | Glossy   |                             |                             |
| <b>Colour</b>  | Black, silk grey (Additional colour options can be made available upon request.) |                             |                             |
| <b>Consumption (Theoretical)</b>   | Approx. 1 kg/m <sup>2</sup> @ 600 microns DFT                                    |                             |                             |
| <b>Consumption (Practical)</b>   | Approx. 1.4 kg/m <sup>2</sup> @ 600 microns DFT                                  |                             |                             |
| <b>Typical Dry Film Thickness (DFT)</b>  | Approx. 600 -1200 microns (Please consult HEGGEL!)                               |                             |                             |
| <b>@Temperature</b>  | <b>10°C</b>  | <b>23°C</b>                 | <b>30°C</b>                 |
| <b>Pot Life</b>  | 35 min   | 30 min                      | 20 min                      |
| <b>Curing Time (Foot Traffic Load)</b>   | 24 hrs   | 12 hrs                      | 6 hrs                       |
| <b>Curing Time (Mechanical Load)</b>   | 72 hrs   | 48 hrs                      | 24 hrs                      |
| <b>Curing Time (Chemical Load)</b>   | 7 days   | 5 days                      | 3 days                      |
| <b>Overcoat Duration with Itself "Wet to wet" approx. after 15 minutes</b> (with regards to the maximum layer thickness) | 12 - 48 hrs<br>max. 3 months   | 6 - 48 hrs<br>max. 3 months | 3 - 24 hrs<br>max. 3 months |

**Note 1:** The data regarding practical consumption or coverage incorporates an estimated loss of 30%. The practical consumption is subject to specific project conditions and will be determined accordingly to ensure optimal results. Please consult HEGGEL!

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

**Note 3:** Please note that the 3-month overcoat duration was determined under controlled laboratory conditions. Adequate surface preparation using appropriate equipment is necessary for areas exposed to environmental elements. For further guidance, please consult us!

**Packaging:**

16 kg kits (14 kg component A + 2 kg component B), other sizes are available on request.

**Storage:**

12 months, in sealed original containers under dry and cool conditions, ideally between 15 - 25°C. Protect from heat and freeze!

## 1. Surface Preparation

The steel surface to be coated must be dry and free from mill scale, debris, grease, oil, dust, rust, and any other contaminants that could hinder adhesion (refer to DIN report 28). Welding beads should be eliminated and welding seams and overlaps must be smooth as per DIN EN 14879-1. Surface should be blast-cleaned with tough grit according to DIN EN 12944-4 (ISO 8501-1/-2), reaching preparation grade SA 2.5. Only approved angular-grain blasting abrasives are to be used, aiming for an average roughness RY5 (RZ)  $\geq$  50 microns respectively 'middle (G)' as per DIN EN ISO 8503-2 (ISO 8503-2). In case of uncertainty, surface cleanliness should be tested for soluble contaminants following EN ISO 8502-6 (Bresle method) and EN ISO 8502-9 before coating.

## 2. Mixing

To ensure optimal performance of the product, thorough mixing is essential. Make sure both base and hardener components are kept between 20-30°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 by the power mixer (300 - 400 rpm) for at least 3 minutes, ensure to achieve a thoroughly uniform mixture. Transfer the mixture to a clean receptacle and continue mixing for an additional minimum of one minute.

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 substrate is between 10 - 40°C and as well as the temperature of air is 3°C above the dew point in addition to ensuring the relative humidity being in the range under 85% before, during, and after surface

preparation, application and curing process. In case the substrate's temperature falls below 10°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

**Spray:** For an effective application, use airless spray equipment with a minimum pressure ratio of 68:1. The equipment should include a spray hose of approximately 30m  $\frac{3}{8}$ " + 2m  $\frac{1}{4}$ ". The inlet pressure should range between 3 to 5 bar for optimal operation. Additionally, the nozzle size should be between 0.43 - 0.64 mm (0.017" up to 0.025"), and the spraying angle should be adjustable between 30-80° for diverse application needs.

We advise removing the high-pressure filters and pumping the material directly, bypassing the use of a siphon tube.

**N/B:** When working at low temperatures, the use of insulated hoses and a flow heater is mandatory. If you require a longer spray hose distance (> 30 m) and an independent application time or pot life, we recommend the use of a plural component airless spray equipment.

**Brush / Roller:** This method is primarily suggested for coating small areas, carrying out repairs, or pre-coating edges. Multiple coatings should be applied until the desired film thickness is achieved. Typically, a film thickness of 250 - 300 microns per coat can be achieved using this procedure. For superior aesthetic requirements, consider using the version **HEGGEL Coat 122** specifically optimized for manual application.

## 5. Chemical Resistance

- Industrial and marine conditions
- Water, seawater, brackish water
- Mineral oil, aliphatic hydrocarbons
- Neutral salt solutions
- Diluted acids, alkalis
- Oil, fat, lubricants and fuels

**Note:** Considering that numerous factors, such as medium, temperature, concentration, and layer thickness, can impact the coating's durability, we strongly advise consulting with us prior to application.

## 6. 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 Coat 111** 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. Do not add any thinner to the coating.

In instances where a primer is needed, consider applying a layer of epoxy zinc primer. Be aware that under weather exposure, **HEGGEL Coat 111** can exhibit chalking and discoloration. For enhanced durability, we advise using an HEGGEL topcoat at 1 or 2 layers. Please consult HEGGEL!

The aforementioned details are merely recommendations and may be tailored according to the specific conditions of the project.

For cleaning and purging the spray equipment, we recommend using **HEGGEL Coat 111 SOL-cleaner**, ideally at a temperature range of approximately 30 - 40°C.

## 7. 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.

## Technical Data

| Title                  | Value                  | Unit              |
|------------------------|------------------------|-------------------|
| Mixed Density (23°C)   | Approx. 1.65           | g/cm <sup>3</sup> |
| Mixed Viscosity (20°C) | Approx. 3500 $\pm$ 500 | mPa.s             |
| Solids Content         | 100                    | %                 |

**HEGGEL Coat 111**; Revision No: 3.10 / Last Revision Date: 05.07.2023

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.

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