HEGGEL® Coat 165

Surface-Tolerant Epoxy Mastic / Primer / Coating

You Build, We Protect!

Description:

HEGGEL Coat 165 is a two-component, surface-tolerant, biobased aluminum mastic/primer/coating based on special epoxy resins and a modified phenalkamine curing agent. The aluminum mastic variant is designed to comply with EPA requirements while providing reliable corrosion protection and strong adhesion on less-than-ideal surfaces. It is developed as a maintenance primer/coating for steel structures, suitable for application on Sa2½ blast-cleaned surfaces, and designed to also provide adequate performance on lower preparation levels such as St2 and hand-prepared substrates, as well as on existing coating systems. Due to its early water resistance, it can be applied at high relative humidity (up to 90%) and on damp surfaces. The coating is recoatable with itself, as well as with epoxy, polyurethane, vinyl, and alkyd coatings, offering flexibility in maintenance and repair applications.

Characteristics:

- Heavy-duty performance
- Biobased epoxy mastic
- Remarkable mechanical strength
- Good abrasion resistance
- Resistant in marine splash zones and offshore exposure
- Very tight, impenetrable coating
- Suitable for immersion service
- Curing at low temperatures (min. 5 °C)
- Easy application by airless spray and brush or roller
- Early water resistance
- VOC ≤ 160 g/l

Application Areas:

HEGGEL Coat 165 is suitable for internal and external protection of steel structures, including maintenance of hand-prepared surfaces and existing coatings, exposed to aggressive atmospheric, marine, offshore, and immersion environments up to C5-I, C5-M, IM-1, IM-2, and IM-3 according to ISO 12944.

Application Data:

Finish	Semi-matt **Note:** The final gloss level is influenced by the substrate condition and applied film thickness, and may in some cases differ from the stated values.	
Colour	Aluminium	
Mixing Ratio	Base : Activator = 1 : 1 (Parts by volume)	
Theoretical Consumption	~ 0.15 l/m² @ 125 microns DFT	
Practical Consumption	For large areas: ~ 0.22 l/m² @ 125 microns DFT For small areas: ~ 0.30 l/m² @ 125 microns DFT **Note**: Performance in practice varies with site conditions; so, the stated consumption values should be used as guidelines for airless spraying.	
Standard Dry Film Thickness (DFT)	80-250 microns (depends on application process)	
Temperature	**10 °C**	**20 °C**
Pot Life	-	4 hrs
Drying Time (Dust Free)	6 hrs	4 hrs
Drying Time (Manageable)	30 hrs	16 hrs
Overcoat Interval	16 hrs	8 hrs

Note 1: All the provided values are approximate and should be used as guidelines for specifications.
Note 2: Drying times obtained using **HEGGEL Coat 165 Activator** at 50% relative humidity and a nominal dry film thickness of 250 µm. At higher film thicknesses, longer drying times must be considered.
Note 3: No maximum overcoating interval, provided the surface is clean, dry, and free from contaminants.

Packaging:

20 litre cans
HEGGEL Coat 165 Thinner: 25 litre jerry cans or 200 litre drums

Storage:

12 months, in sealed original containers under dry and cool conditions, ideally between 5 – 40 °C. Protect from heat and freeze!

1. Surface Preparation

Steel: Steel surfaces shall be prepared to a cleanliness level of Sa 2½ in accordance with ISO 8501-1, with a blasting profile of 40–70 µm, or alternatively cleaned using power tools to a recommended minimum standard of ISO St3 / SSPC SP3 for optimal coating performance.

For untreated steel, surface preparation shall be carried out in accordance with ISO 12944-4 §6.2.3. All grease, oil, dirt, and other contaminants must first be removed using a suitable cleaning agent such as **HEGGEL Cleaners** applied with a high-pressure spraying pistol. The surface shall then be grit blasted to Sa 2½ according to ISO 8501-1. After blasting, all dust must be removed from the entire surface using clean, dry, oil-free compressed air. The first coating layer must be applied within 6 hours after blasting. If the final coating layer is to be applied on the construction site, additional precautions must be taken to maintain surface cleanliness and coating performance.

Hot dip galvanized: The surface must be prepared in accordance with ISO 12944-4, section 6.2.3.4.1 (sweep blasting with inert grit) and NEN 5254 for duplex systems. All grease, oil, and contaminants should be removed using a suitable cleaning agent like **HEGGEL Cleaners.** The entire galvanized surface must then be lightly sweep-blasted using an inert abrasive with a grain size of 0.3–0.5 mm, at a blasting pressure of 2.0–2.5 bar and a minimum nozzle diameter of 6 mm. After blasting, the surface should exhibit a uniform, matte appearance. Depending on the zinc coating thickness, a maximum of 5–10 µm of zinc may be removed, as specified in NEN 5254. Finally, remove all dust from the surface using clean, dry, oil-free compressed air. Apply first coating layer within 2 hours.

2. Environmental Conditions

Prior to, during, and after application of the coating, ensure that the substrate temperature is at least 3 °C above the dew point and the maximum relative humidity shall remain below 90%. Any contact with moisture must be avoided during curing process.

Ensure adequate ventilation during application and curing to facilitate solvent evaporation and proper drying.

3. Application Tools

Air Spray: For effective application, use conventional air spray equipment. Thin the material with **HEGGEL Coat 165 Thinner** at 5–10% by volume. Maintain a flow pressure of 3–4 bar and use a nozzle size of 2.0–3.0 mm. The achievable dry film thickness is in the range of 80–250 µm.

Airless Spray: Apply using standard airless spray equipment. No thinning is required. Operate at a pressure range of 150–175 bar and use a nozzle size of 0.015–0.017 inch. The achievable dry film thickness is in the range of 80–250 µm.

Air mix: Application may be carried out using Air mix spray equipment. Thin the material with **HEGGEL Coat 165 Thinner** at 5–10% by volume. Maintain a flow pressure of 70–100 bar and use a nozzle size of 0.015–0.017 inch. The achievable dry film thickness is in the range of 80–250 µm.

Brush / Roller: Application may be carried out using brush or roller. Thin the material with **HEGGEL Coat 165 Brush Thinner** at 0–5% by volume if required. Typically, a film thickness of approximately 80 µm per coat can be achieved using this method.

4. Mixing

Thoroughly mix the base component and activator using a mechanical mixing device. Ensure the temperature of the mixed material is maintained at a minimum of 5 °C during application.

5. Application

The coating is preferably applied using airless or air mix spray equipment, as brush application may result in variations in film thickness and reduced flow properties.

The product can be applied without thinning when using airless spray equipment at 18–23 °C.

Apply uniformly to achieve required dry film thickness.

Where thinning is required, the amount of **HEGGEL Coat 165 Thinner** should be adjusted depending on the equipment used, application method, and temperature of the mixed material.

Note: Under weathering conditions, **HEGGEL Coat 165** may exhibit chalking and discoloration. For enhanced durability, we advise using HEGGEL topcoats. Please consult HEGGEL!

Note: Clean all equipment immediately after application using **HEGGEL Coat 165 Thinner**.

6. Repairing Defects

Touch-up of damaged or untreated areas shall be carried out on site. Remove grease, oil, and dirt using suitable cleaning agents like **HEGGEL Cleaners**. Remove rust from mechanically damaged areas, weld seams, weld spots, and heat-affected zones using rotating steel wire brushes, sanding discs, or coarse sandpaper to a minimum cleanliness grade St 3 in accordance with ISO 8501-1.

Smooth the transition between cleaned areas and adjacent intact coatings by sanding and scraping. After sanding, remove all dust using clean, dry, oil-free compressed air. Then repair the area using the complete coating system in accordance with the coating specification. Minor surface damage may be repaired using the top coat only.

Note: Regular cleaning of the surface is recommended. The coating system should be inspected annually for defects, and any damage shall be repaired using the original coating system.

7. Safety Measures

HEGGEL Coat 165 (UN number: 1263) is in accordance with EU Directive 67/548/EEC and applicable hazardous substances regulations.

Ensure adequate ventilation during application and drying to reduce solvent vapors. This is necessary to achieve proper drying conditions and to protect applicators' health. Causes skin and eye irritation and may be harmful if inhaled. In case of eye contact, immediately rinse thoroughly with water and seek medical attention. Do not eat, drink, or smoke while handling this product. Keep away from heat, sparks, and open flames.

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	Standard	Value
Solids Content (Mix)	-	~82 vol.% (depends on colour)
Biobased Content *		27%; reduces CO_2 footprint by 1.4 kg/l
Density (Mix) @ 20 °C	-	~ 1.40 kg/l
Corrosion Resistance	Electrochemical Impedance Spectroscopy (EIS)	Rc = 1.3 × 10^8 Ω, n=0.98 (after 21 days)
Salt Spray Resistance	ISO 9227 (NSS) / ASTM B117	>5500 hrs
Pull-Off Adhesion	ISO 4624 / ASTM D4541	Before salt spray: 13.0 MPa After salt spray: 11.0 MPa
Cathodic Disbondment	ASTM G8 (NORSOK system)	30 days: <10 mm
Flexibility	ISO 1520	3.3 mm (Cupping Test)
	ISO 1519 / ASTM D522	20 mm (Cylindrical mandrel)
Impact Resistance	ISO 6272 / ASTM D2794	6 Nm
Immersion Resistance	Based on testing aligned with NORSOK M501 methodologies	>4200 hrs
Cyclic Corrosion Resistance	ISO 20340	>4200 hrs
Temperature Resistance	-	Dry heat: Up to 200 °C

Note 1: Immersion resistance and salt spray resistance tests were conducted on HEGGEL multi-layer coating systems.
Note 2 *: CO_2 impact varies with HEGGEL activators and project conditions. See Mixing section; for project-specific calculations, contact HEGGEL.

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