

# HEGSEL Coat 121

2-C-EP-corrosion protection coating for hydraulic steel engineering

<b>Description:</b>	2-component epoxy coating with <b>HEGSEL - bionic technology</b> VOC < 1 %, free of heavy metals, benzyl alcohol, coal tar, anthracene oil and plasticizers.																														
<b>Characteristics:</b>	<ul style="list-style-type: none"> <li>• Excellent corrosion protection</li> <li>• Very high abrasion resistance</li> <li>• High tolerance to early water stress</li> <li>• No shrinkage by migration of plasticizer</li> <li>• Excellent surface gloss (even at high relative humidity)</li> <li>• Excellent adhesion strength</li> <li>• Inert and harmless once cured</li> </ul>																														
<b>Application:</b>	<b>HEGSEL Coat 121</b> is a high abrasion resistant, economical coating which is especially suitable as corrosion protection of steel constructions for hydraulic engineering, e.g. flood gates, steel sheet piles and weir plants. <b>HEGSEL Coat 121</b> is used as highly mechanical and chemical resistant / hard-wearing coating that offers excellent anticorrosion properties. <b>HEGSEL Coat 121</b> must be applied by using airless spray equipment (with a flow heater if required) and is suitable for high-build application in one coat; multiple application is also possible. Due to the special formulation a primer is not required. In case of need (tender) it is possible to apply an epoxy zinc primer. For manual application we offer the specific formulation <b>HEGSEL Coat 122</b> (optimized quality for application by hand).																														
<b>Layer thickness:</b>	Approx. 600 - 1200 microns / depending on the object																														
<b>Consumption:</b>	Theoretical: approx. 1 kg/m <sup>2</sup> at 600 microns DFT Practical: approx. 1.4 kg/m <sup>2</sup> at 600 microns DFT The information relating to practical consumption / coverage is calculated to include 30 % loss. The practical consumption / coverage depends on the conditions of the substrate. We recommend to apply a test area.																														
<b>Resistant to:</b>	<ul style="list-style-type: none"> <li>• Industrial and marine conditions</li> <li>• Water, seawater, brackish water</li> <li>• Mineral oil, aliphatic hydrocarbons</li> <li>• Wet heat up to +50°C (please consult us)</li> <li>• Neutral salt solutions</li> <li>• Diluted acids</li> <li>• Oil, fat, lubricants and fuels</li> <li>• Dry heat up to +100°C</li> </ul>																														
<b>Technical Data:</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Mixing ratio A : B</td> <td>7 : 1 by weight resp. 4 : 1 by volume</td> </tr> <tr> <td>Density (23°C)</td> <td>approx. 1.65 g/cm<sup>3</sup></td> </tr> <tr> <td>Volume solids</td> <td>approx. 100 %</td> </tr> <tr> <td>Viscosity (23°C)</td> <td>approx. 3500 mPa·s ± 500</td> </tr> </table>	Mixing ratio A : B	7 : 1 by weight resp. 4 : 1 by volume	Density (23°C)	approx. 1.65 g/cm <sup>3</sup>	Volume solids	approx. 100 %	Viscosity (23°C)	approx. 3500 mPa·s ± 500																						
Mixing ratio A : B	7 : 1 by weight resp. 4 : 1 by volume																														
Density (23°C)	approx. 1.65 g/cm <sup>3</sup>																														
Volume solids	approx. 100 %																														
Viscosity (23°C)	approx. 3500 mPa·s ± 500																														
<b>Details for application:</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Pot life (10°C / 23°C / 30°C)</td> <td colspan="2">approx. 35 minutes / 30 minutes / 20 minutes</td> </tr> <tr> <td>Substrate temperature</td> <td colspan="2">minimum 10°C up to maximum 40°C</td> </tr> <tr> <td>Material temperature (flow heater if required)</td> <td colspan="2">20°C - 30°C</td> </tr> <tr> <td>Maximum relative humidity of air</td> <td colspan="2">85 %</td> </tr> <tr> <td>Dew point - substrate temperature</td> <td colspan="2">minimum +3°C above dew point</td> </tr> <tr> <td>Duration to overcoat with itself "wet to wet" approx. after 15 minutes (with regards to the maximum layer thickness)</td> <td>10°C: 12 - 48 hours 23°C: 6 - 48 hours 30°C: 3 - 24 hours *see note / overcoat</td> <td>max. 3 months* max. 3 months* max. 3 months*</td> </tr> <tr> <td>Curing time / foot traffic (10°C / 23°C / 30°C)</td> <td colspan="2">24 hours / 12 hours / 6 hours</td> </tr> <tr> <td>Curing time / mech. resistance (10°C / 23°C / 30°C)</td> <td colspan="2">72 hours / 48 hours / 24 hours</td> </tr> <tr> <td>Curing time / chem. resistance (10°C / 23°C / 30°C)</td> <td colspan="2">7 days / 5 days / 3 days</td> </tr> <tr> <td colspan="3">All above values are approximate and may be used as a guideline for specifications</td> </tr> </table>	Pot life (10°C / 23°C / 30°C)	approx. 35 minutes / 30 minutes / 20 minutes		Substrate temperature	minimum 10°C up to maximum 40°C		Material temperature (flow heater if required)	20°C - 30°C		Maximum relative humidity of air	85 %		Dew point - substrate temperature	minimum +3°C above dew point		Duration to overcoat with itself "wet to wet" approx. after 15 minutes (with regards to the maximum layer thickness)	10°C: 12 - 48 hours 23°C: 6 - 48 hours 30°C: 3 - 24 hours *see note / overcoat	max. 3 months* max. 3 months* max. 3 months*	Curing time / foot traffic (10°C / 23°C / 30°C)	24 hours / 12 hours / 6 hours		Curing time / mech. resistance (10°C / 23°C / 30°C)	72 hours / 48 hours / 24 hours		Curing time / chem. resistance (10°C / 23°C / 30°C)	7 days / 5 days / 3 days		All above values are approximate and may be used as a guideline for specifications		
Pot life (10°C / 23°C / 30°C)	approx. 35 minutes / 30 minutes / 20 minutes																														
Substrate temperature	minimum 10°C up to maximum 40°C																														
Material temperature (flow heater if required)	20°C - 30°C																														
Maximum relative humidity of air	85 %																														
Dew point - substrate temperature	minimum +3°C above dew point																														
Duration to overcoat with itself "wet to wet" approx. after 15 minutes (with regards to the maximum layer thickness)	10°C: 12 - 48 hours 23°C: 6 - 48 hours 30°C: 3 - 24 hours *see note / overcoat	max. 3 months* max. 3 months* max. 3 months*																													
Curing time / foot traffic (10°C / 23°C / 30°C)	24 hours / 12 hours / 6 hours																														
Curing time / mech. resistance (10°C / 23°C / 30°C)	72 hours / 48 hours / 24 hours																														
Curing time / chem. resistance (10°C / 23°C / 30°C)	7 days / 5 days / 3 days																														
All above values are approximate and may be used as a guideline for specifications																															
<b>Clean up machine:</b>	To clean and flush the spray equipment / machine we recommend to use <b>HEGSEL Coat 121 SOL-</b> cleaner with a temperature of approx. 30 - 40°C.																														
<b>Packaging:</b>	16 kg - pails (14 kg component A + 2 kg component B), other pails are available on request.																														
<b>Colour:</b>	Black, silk grey (other colours are available on request.) - Due to raw material variations and manufacturing techniques, a slight colour / batch difference may occur -																														
<b>Storage:</b>	12 months, unopened in original drums under dry conditions and a temperature of 15 - 25°C. At temperatures < 10°C crystallisation is possible. Please consult us.																														

## 1. Surface preparation

The steel surface that is to be coated must be dry and free of mill scale, debris, grease, fat, oil, dust, areas of corrosion / rust as well as other contaminants which may impair the adhesion (see DIN report 28 "corrosion protection for steel constructions by using coating systems – testing the surface regarding to invisible contaminants before application"). Welding beads must be removed, welding seams and welding overlaps must be smooth in accordance with DIN EN 14879-1. Surface preparation by blast cleaning (with tough grit) in accordance with DIN EN 12944-4 (ISO 8501-1/-2), preparation grade Sa 2½. Use only approved blasting abrasives with angular grain. Average roughness  $R_{V5}$  ( $R_z$ )  $\geq$  50 microns respectively "middle (G)" in accordance with DIN EN ISO 8503-2 (ISO 8503-2). Prior to, during and after surface preparation, application and curing the substrate temperature must be minimum +3°C / 3K above the dew point (see dew point table). In case of doubt the surface cleanliness must be measured regarding soluble contaminants in accordance with EN ISO 8502-6 (Bresle method) and EN ISO 8502-9 prior to coating.

## 2. Preparation of material

### Airless spray resp. brush / roller

The temperature of the components must be at least 20°C. Stir the components thoroughly and mix in the correct ratio using a suitable low speed electric mixer (300 - 400 rpm) for at least 3 minutes or until a completely homogeneous mixture has been achieved. Put the mixed material into a clean container and mix again for at least 1 minute more.

## 3. Application method (use without thinner!)

### Airless spray

Efficient airless spray equipment

- Pressure ratio: minimum 1 : 68
- Spray hose: approx. 30 m  $\frac{3}{8}$ " + 2 m  $\frac{1}{4}$ "

- Inlet pressure: 3 - 5 bar
- Nozzle size: 0.43 - 0.64 mm (0.017" up to 0.025")
- Spraying angle: 30 - 80°

We recommend to remove the high-pressure filters and to pump the material directly without a siphon tube.

**Attention!** To ensure a proper application at low temperatures a hose insulation and a flow heater have to be used.

**N/B:** At low temperatures it is necessary to use insulated hoses and a flow heater! Please use a plural component airless spray equipment, if a longer spray hose distance (> 30 m) and an independent application time / pot life is required.

### Brush / roller

Recommended for small areas, repairs or to precoat edges, only. Repeat the coats until sufficient film thickness is obtained. Normally a film thickness of 250 - 300 microns per coat can be obtained by this method. For increased visual demands the optimized for manual application version **HEGGEL Coat 122** is available.

If required, a primer layer with an epoxy zinc primer can be applied.

In exposure to weathering, **HEGGEL Coat 121** tends to chalking and discolouring. In case of higher demand, we recommend to use a **HEGGEL or HEGGEL Coat** - topcoat (1 - 2 x).

The a. m. information are recommendations only and may be adjusted depending on the conditions of the object.

## 4. Resistance

### Mechanical

- Impact resistant
- High abrasion resistant

### Thermal

- Dry heat up to +100°C continuously, short-term up to +150°C
- Wet heat up to +50°C continuously, short-term up to +70°C

### Chemical

- Industrial and marine conditions
- Water, seawater, brackish water
- Oil, fat and lubricants
- Diluted acids, alkalis
- Neutral salt solutions

Due to the fact that the resistance of the coating can be affected by various factors (medium, temperature, concentration, layer thickness, etc.) we recommend to consult us prior to application.

**\*Note / overcoat:** 3 months have been realised at the laboratory. Surfaces which have been exposed to weathering must be prepared by qualified equipment. Please consult us!

### Health and safety:

#### GISCODE: RE30

While **HEGGEL Coat 121** is a (nearly) solvent free coating, it is common practice when used in enclosed areas to circulate the air during and after the application until the coating is cured. The ventilation system should be capable of preventing any solvent vapour concentration from reaching the lower explosion limit for any solvents that may be present. Avoid inhalation of the vapours. Wear suitable protective clothing, gloves, eye / face protection and suitable respiratory equipment. Adequate ventilation of the working areas is recommended. After contact with skin, wash immediately with plenty of water and soap. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. When using do not eat, drink, smoke and keep away from sources of ignition. For additional references to safety-hazard warnings, regulations regarding the transport and waste management please refer to the relevant Safety Data Sheet.

**HEGGEL Coat 121**; Revision No: 3.00 / Last Revision Date: 20.10.2020

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 actual 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](mailto:info@heggel.de)

Web: [www.heggel.de](http://www.heggel.de)