# HEGGEL® Pox 463

Electrically Conductive Water-Based Epoxy Coating

*You Build, We Protect!*

## Description:

**HEGGEL Pox 463** is a two-component, water-based, pigmented, electrically conductive epoxy resin intermediate coat with very low emissions. It is designed as a highly conductive intermediate layer, providing excellent transverse conductivity and effective electrical equalization within conductive flooring systems. The product is applied over installed copper grounding tapes on cured primers or scratch coats and may be incorporated into suitable HEGGEL coating systems intended for applications subject to WHG requirements, subject to system-specific verification.

## Characteristics:

- Highly electrically conductive
- Electrical Resistance < $10^5$ Ω
- Low odour
- Easy application and economical consumption
- Harmless in its fully cured state

## Application Areas:

**HEGGEL Pox 463** is suitable for flooring installations in electrostatic discharge (ESD) controlled areas, explosion protection (Ex) zones, and other industrial environments requiring reliable control of electrostatic charges.

## Application Data:

| | | | |
|---|---|---|---|
| **Colour** | Black<br>**Note:** Minor colour and batch variations may occur due to raw material and production tolerances. | | |
| **Mixing Ratio** | A : B = 1 : 4 (Parts by weight) | | |
| **Consumption** | 100 - 140 g/m² plus up to 10% water | | |
| **Temperature** | **15 °C** | **20 °C** | **30 °C** |
| **Pot Life** | 75 min | 60 min | 30 min |
| **Curing Time (Walkable)** | 22 - 28 hrs | 18 - 24 hrs | 14 - 18 hrs |
| **Curing Time (Mechanical Load)** | - | 2 - 3 days | - |
| **Waiting Time Until Further Processing** | Min. 24 hrs (12 °C)<br>Max. 72 hrs (12 °C) | Min. 12 hrs (23 °C)<br>Max. 48 hrs (23 °C) | Min. 6 hrs<br>Max. 24 hrs |

**Note 1:** All stated values are laboratory guideline values and are not product specifications.
**Note 2:** Overcoating prior to the minimum waiting time may adversely affect the performance of the subsequent coating layer.

## Technical Data:

| Title | Standard | Value |
|---|---|---|
| **Solids Content** | - | ~ 40 vol.% |
| **Density (Mix) @23 °C** | - | ~ 1.08 g/cm³ |
| **Viscosity @ 23 °C** | - | ~ 1,200 mPa.s<br>(without dilution water) |
| **Electrical Resistance** | - | < $10^5$ Ω |

## Packaging:

10 kg kit (2 kg Component A + 8 kg Component B)

## Storage:

6 months, in sealed original containers under dry and cool conditions, ideally between 15 – 25 °C. Temperatures below 15 °C may cause crystallization. If crystallization is suspected, consult HEGGEL before use.
Protect from heat and freezing.

## 1. Surface Preparation

Before application, the substrate must be prepared mechanically by shot blasting using suitable equipment. The substrate must meet the following minimum requirements: it should be free of cement laitance, dust, oil, grease, and other contaminants, have an open textured and absorbent surface, a pull-off strength of at least 1.5 MPa, and a concrete residual moisture content shall be max. 4 wt.%

The substrate shall be prepared to a pore-free condition by applying a primer and an intermediate layer (scratch coat) using **HEGGEL Pox 495**.

Install grounding contacts on the suitably prepared substrate using split copper cables in accordance with the specified grounding requirements. Copper strips shall be bonded in a grid arrangement with a spacing of 6-8 m and extended approximately 1-2 m into the room to ensure reliable grounding of the flooring system. The installation of the grounding system shall be carried out by a qualified electrician. The grounding layout and connection details should be defined on a project-specific basis before application. Particular attention shall be paid to secure fixing and long-term durability of all grounding contacts.

## 2. Environmental Conditions

Prior to, during, and after application of the coating, ensure that the room, floor, and substrate temperatures remain at a minimum of 15 °C and at least 3 °C above the dew point. The maximum relative humidity shall remain below 75%. The material temperature shall be maintained between 15 °C and 25 °C during application.

## 3. Application Tools

- Mixing vessel
- Low-speed mixer
- Lambskin roller

## 4. Mixing

Before mixing, the temperature of the individual components shall be at least 15 °C. Mix the components 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 is achieved. Transfer the mixed material into a clean container and mix for an additional minute.

Up to 10% water may be added after mixing to adjust the application viscosity. The water shall be thoroughly incorporated into the mixture.

The mixed material shall be applied immediately after mixing.

## 5. Application

Apply **HEGGEL Pox 463** uniformly and thinly using a lambskin roller. Avoid puddle formation and excessive film thickness, as these may cause cracking and negatively affect electrical conductivity.

**Note:** The coating contains water which evaporates during curing. Adequate ventilation shall therefore be maintained throughout the curing period. In small rooms, ventilation must already be ensured during application.

After curing, the electrical resistance shall be measured and documented using a high-resistance meter operating at 100 V.

## 6. Typical System Build-Up

The following figures apply to ambient and surface temperatures between 15 °C and 23 °C. Both higher and lower temperatures will affect the filler ratio and consumption per square meter and may affect the appearance.

- **Primer:**

As a primer, apply transparent **HEGGEL Pox 495** at ~ 0.3 – 0.4 kg/m².

- **Intermediate Coat (Scratch Coat):**

**HEGGEL Pox 495** + quartz sand mixture in a ratio of 1: 0.8 parts by weight.

Consisting of quartz flour (< 0.06 mm) and quartz sand (0.06–0.3 mm) in a mixing ratio of 1: 1.4.

Consumption: ~ 450 g/m².

- **Grounding contacts:**

Install grounding contacts at intervals of approximately 10 m radius in accordance with the copper strip layout and have them connected by a qualified electrician.

- **Conductive layer:**

**HEGGEL Pox 463,** black

Consumption: ~ 100–140 g/m² plus up to 10% water.

- **AS and ESD Coatings**

Suitable antistatic (AS) and Electrostatic Discharge (ESD) coating systems may subsequently be applied over the conductive layer. Please consult HEGGEL.

**Note:** When applying self-levelling coatings using metallic notched trowels, excessive mechanical stress on the conductive layer should be avoided as this may cause visible discoloration. Rubber squeegees are preferred.

The coating system consisting of **HEGGEL Pox 495** (primer and intermediate coat), **HEGGEL Pox 463**, and **HEGGEL Pox 426** has a crack-bridging capability of 0.2 mm when a thixotropic agent is added (up to 2%) and 0.3 mm without the addition of a thixotropic agent. On vertical and inclined surfaces, up to 2% **HEGGEL Thixotropic Agent** may be added to the topcoat.

## 7. Safety Measures

Wear appropriate protective clothing, gloves, and eye/face protection. Avoid inhalation of vapours and skin contact and ensure good room ventilation. If the resin comes into contact with skin, wash immediately with plenty of water and soap. In case of eye contact, rinse thoroughly with plenty of water and seek medical advice. Do not eat, drink, or smoke while using the product, and keep it away from sources of ignition.

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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