PRODUCT DATA SHEET

EP 280 WHG

Version, Penetron Hellas 17.08.2026

ELECTRICALLY CONDUCTIVE HIGHLY CHEMICALLY RESISTANT TWO-COMPONENT EPOXY RESIN COATING FOR WHG-APPLICATIONS

DESCRIPTION

EP 280 WHG is a solvent-free, electrically conductive and crack-bridging, 2-component epoxy resin flow-coat with very good chemical resistance. EP 280 WHG has been tested according to the Water Resources Act (WHG § 63) and is approved by the German Institute for Construction Technology (DIBt®). The coating is suitable for the application in collection trays and rooms such as production / handling areas and storage / handling areas which have to be equipped with coating systems tested in accordance with the WHG. The conductive property ensures protection against explosion. The material is especially suitable for production areas in the chemical and pharmaceutical industry, in laboratories, but also for other manufacturing areas with high exposure to chemicals. The coating is suitable for fork-lift traffic. EP 280 WHG shows good resistance to chemicals. The material is resistant to solvents, motor fuel, oil, mineral acids, alkalis, and salts according to the principles of the DIBt®. Please refer to the following exposure classifications and the test report. Due to the electrically conductive adjustment alteration in colour is possible for technical reasons. Colour alteration due to aging will not change the technical properties. The effect of chemicals may cause discolouration but does not affect the properties of the material.

RECOMMENDED FOR

Typical areas of application are:

- Coating for collection trays and rooms with requirements according to the Water Resources Act and technical approval.
- Industrial flooring with vehicle traffic with requirements according to the Water Resources Act.
- Electrically conductive and chemical resistant industrial flooring.

ADVANTAGES

- “Total solid” according to Giscode (test method of the Deutsche Bauchemie, German construction chemistry association)
- Electrically conductive
- High chemically resistance
- Crack bridging (0.2 mm)
- Suitable for vehicle traffic
- Liquid tight
- Solvent-free
- Tested and approved for storage/handling facilities (LAU)
- Free of deleterious substances against varnish

TECHNICAL CHARACTERISTICS

Characteristic	Test Result	Test Method
Viscosity (Components A+B)	2,600 mPa s	EN ISO 3219 at 73.4 °F (23 °C)
Density (Components A+B)	1.60 kg/lt	EN ISO 2811-2 at 68 °F (20 °C)
Color	Approx. RAL 1001, 3009, 6011, 7015, 7023, 7030, 7032, 7038, 7042	
Solid content	> 99 %	KLB-Method
Weight loss	0.3 % after 28 days	
Water absorption	< 0.2 weight %	DIN 53495

PENETRON® ADVANCED WATERPROOFING & PROTECTION SYSTEMS

ELECTRICALLY CONDUCTIVE HIGHLY CHEMICALLY RESISTANT TWO-COMPONENT EPOXY RESIN COATING FOR WHG-APPLICATIONS

Characteristic	Test Result	Test Method
Shore hardness D	65	DIN 53505 (after 7 days)
Abrasion (Taber Abraser)	50 mg	ASTM D4060
Electrical conductivity	Approx. 10^6 Ohm (in combination with EP 799 Ableitgrund)	
Bleeder resistance	Approx. 10^6Ohm	DIN EN 61340-4-1
Addition of quartz sand	Not recommended	
Processing time at 50 °F (10 °C)	40 minutes	
Processing time at 68 °F (20 °C)	20 minutes	
Processing time at 86 °F (30 °C)	10 minutes	
Processing temperature	Minimum 50 °F (10 °C), maximum 86 °F (30 °C) (room and floor temperature)	
Curing time at 50 °F (10 °C)	24-36 hrs (Accessibility)	
Curing time at 68 °F (20 °C)	14-18 hrs (Accessibility)	
Curing time at 86 °F (30 °C)	10-14 hrs (Accessibility)	
Curing	2-3 days for mechanical load at 68 °F (20 °C) 7 days for chemical resistance at 68 °F (20 °C)	
Further coatings	After 10-14 hours, but not longer than 48 hours at 68 °F (20 °C)	

The aforementioned results are related to average laboratory test results. In reality the climate changes, such as temperature, moisture and surface porosity may change these results.

DIRECTIONS FOR USE

Surface Preparation: The substrate to be coated has to be levelled, dry, free of dust, has to have adequate tensile and compressive strength, and be free from weakly-bonded components or surfaces. Materials impairing adhesion, such as grease, oil and paint residues must be removed using suitable methods. The surface strength must then be a minimum of 1.5 N/mm². For concrete, moisture content must not exceed 4.5 CM-%, remaining residual moisture. The possibility of moisture ingress from the rear must be permanently excluded. Please refer to the advice issued by the trade associations, e.g. the current edition of BEB-worksheets KH-0/U and KH- 0/S, as well as the product information for the recommended base coat EP 55. The prepared surface has to be primed accurately, saturated, and free of pores. Estimating the substrate according to the necessary sealed state may be difficult, so a scratch coat is recommended for smoothing the surface. The conductive coating must be applied in an even thickness that is why it is mandatory to prepare the substrate thoroughly. If the substrate hasn't been sealed completely bubbles and pores may appear because of rising air. Conduct a trial if in doubt.

Mixing: EP 280 WHG will be supplied in the correctly measured mixing ratio. Component A has sufficient volume for the entire trading unit. Decant the hardener component B into the resin completely. Blend with a slow speed mixer (200 - 400 r/pm) for at least 2-3 minutes, for a homogeneous mixture, free of streaks. To avoid mixing errors, it is recommended to principally empty the resin/hardener-mixture into a clean container and mix briefly once again.

Mixing ratios:

A:B = 4:1 parts by weight
A:B = 100:42 parts by volume

Processing/Handling:

Build-up of coating according to the Water Resources Act implicates the following steps:

1. Prepare the substrate in accordance to "Substrate" above. In particular, surfaces must be prepared by shot-blasting.
2. Apply a base coat using EP 55. Apply the freshly mixed material with a roller, coating knife, or trowel. Re-work with a roller for a smooth sealed layer. Consumption: 0.3 - 0.4 kg/m². Thickness of layer: 0.3 - 0.4 mm. Scatter the fresh surface with quartz sand 0.3/0.8 mm. Consumption: 0.5 - 1.0 kg/m².
3. For levelling uneven, rough surfaces a scratch-coat is required using EP 55 and Mischsand 2/1 (alternatively QUARTZ SAND MIX 0.10 – 0.45 MM, mixing ratio: 1:0.8 parts by weight). Apply a uniform coat with a smoothing trowel or coating knife after the base coat has cured, but not later than 48 hours. Consumption: 0.5 - 1.0 kg/m². Mixture depending on roughness. Thickness of layers: 0.3 - 0.7 mm.
4. If required, concave or triangular covings may now be inserted. Produce these, using EP 55 with Mischsand 1. If necessary add 1 - 2 % of Stellmittel 3 Super. Mixing ratio EP 55 : Mischsand 1 is 1 : 7 - 9 parts by weight.

ELECTRICALLY CONDUCTIVE HIGHLY CHEMICALLY RESISTANT TWO-COMPONENT EPOXY RESIN COATING FOR WHG-APPLICATIONS

5. For earth connection glue self-adhesive Copper Tape in place and press on very well. Lay in a grid-pat- tern with a maximum distance of 8 - 10 m and at least up to 1 - 2 m into the area. Due to the laterally conductive coating, the copper band does not need to be placed continuously. Consumption: 6 - 10 running metres per 80 - 100 m². Press the copper band down on the substrate very well.
6. Apply the guiding-bed using EP 799 Ableitgrund with a velour roller. Consumption: 0.100 - 0.140 kg/m² with a layer of 0.050 - 0.100 mm. Apply after the previous coat has set – but not longer than 48 hours.
7. Apply EP 280 WHG after 18 hours but not longer than 48 hours. Process the material immediately after mixing with a coating knife or notched trowel (Pajarito 48). Apply an even layer with approx. 1.6 mm thickness. Consumption: 2.4 - 2.6 kg/m². The product is adjusted with an optimum of air venting. To upgrade the wettability of the substrate, optimize the flow-properties, and remove any air blows, it is recommended to re-work with a spiked roller, time-delayed after 10 - 15 minutes. Divide working areas before starting work. Always work “fresh-in-fresh” to avoid any shoulders.
8. For vertical surfaces mix EP 280 WHG coating material with 2 - 4 % Stellmittel 3 Super so that the material will stay on when applied. In advance prime the surface using EP 55 with 2 - 4 % Stellmittel 3 Super added.

Floor- and air-temperature must not fall below 50 °F (10 °C) and/or humidity must not exceed 75 %. The difference in floor- and room-temperature must be less than 37.4 °F (3 °C) so the curing will not be disturbed. If a dew- point situation occurs adhesion may malfunction, curing may be disturbed, and spotting may occur. Exposure to water should be avoided within the first 7 days. Curing time applies to 68 °F (20 °C). Lower temperature may increase, higher temperature may decrease the curing and processing time.

If working conditions are not complied with, deviations in the described technical properties may occur in the end product, especially electrical conductivity.

Testing the conductivity is carried out according to DIN EN 61340-4-1, from the coating surface to a ground point.

Build-up of Coats:

- Test substrate and shot blast.
- Base coat application with EP 55, consumption 0.3 - 0.4 kg/m². Scatter with quartz sand, grain size 0.3/0.8 mm. Consumption: 1.0 kg/m².
- Optional: On rough surfaces, apply a scratch coat using EP 55 / Mischsand 2/1 (alternatively QUARTZ SAND MIX 0.10 – 0.45 MM), mixing ratio: 1:0.8 parts by weight. Consumption: approx. 1.0 kg/m² of the mixture.
- Glue Copper Tape for discharge in an imagined grid-pattern (every 6 - 8 m, up to 1 - 2 m into the room) in place. Earth-connection by an electrician according to VDE-regulations.
- Apply the cross-conductive coat EP 799 Ableitgrund with a roller, consumption approx. 0.100 - 0.140 kg/m².
- Apply EP 280 WHG electrically conductive coating with a trowel (Pajarito 48), consumption approx. 2.5 kg/m². Vent with a spiked roller.

CHEMICAL RESISTANCE

By combining the chosen testing liquids, resistance to the following material groups have been proven by the testing principles of the DIBt®:

- Test Group 1: Motor fuel, super, regular (according to DIN 51600 and DIN EN 228) with a max. of 5 % bio-alcohol (including 1a).
- Test Group 2: Wide cut fuel.
- Test Group 3: Fuel oil (according to DIN 51603-1), diesel fuel (according to DIN EN 590) (including 3a and 3b).
- Test Group 4: All hydrocarbons (including 4a, 4b, 4c).
- Test Group 5: Monovalent and polyvalent alcohol (including 5a, 5b).
- Test Group 6: All halogen hydrocarbons except for fuel (including 6a, 6b).
- Test Group 7: All organic esters and ketones (including 7a and 7b).
- Test Group 8: Aqueous solutions of aliphatic aldehydes up to 40 % (including 8a).
- Test Group 9: Aqueous solutions of organic acids (up to 10 %) and their salts (in aqueous solutions).
- Test Group 10: Mineral acids up to 20 %, as well as acidic hydrolysing salts, excluding hydrofluoric acid, and acids with oxidising effect, and their salts (in aqueous solution).
- Test Group 11: Inorganic alkalis and alkaline hydrolysing salts, except ammonia solutions and salts with oxidising effect.
- Test Group 12: Aqueous solutions of inorganic, nonoxidising salts with a pH-value of 6 - 8.
- Test Group 13: Amines and their salts in aqueous solutions.
- Test Group 14: Aqueous solutions of organic tensides.
- Test Group 15: Cyclic and acyclic esters.

Additionally the resistance to the following materials has also been tested:

- Phosphoric acid 85 %
- Sulphuric acid 90 %
- Hydrochloric acid 37 %
- Hydrofluoric acid 10 %
- Acetic acid 20 %
- Hydrogen peroxide 30 %
- Sodium hypochlorite solution 12 - 14 % active chlorine
- Concentrated ammonia 32 %
- Chromic acid 50 %
- Lactic acid 50 %

The test periods to confirm the stage of exposure, according to the classification of the operation type, were determined as follows:

LAU 1: Minor exposure to the operation types – storage, filling, handling – test period 8 hours
L 2: Medium exposure to the operation type – storage – test period 72 hours
LAU 2: Medium exposure to the operation types – storage, filling, handling – test period 7 days

ELECTRICALLY CONDUCTIVE HIGHLY CHEMICALLY RESISTANT TWO-COMPONENT EPOXY RESIN COATING FOR WHG-APPLICATIONS

L 3: High exposure to the operation type – storage – test period 14 days
LAU 3: High exposure to the operation types – storage, filling, handling – test period 28 days

The higher rated exposure groups include the minor rated groups.

The exposure classification is attributed to the following test groups:

- Exposure classification high / operation type LAU 3: Test groups 1,1a, 2, 3, 3a, 3b, 4, 4a, 4b, 4c, 5, 5a, 5b, 7, 7a, 7b, 8, 8a, 9, 10, 11, 12, 13, 14, additionally ammonia (32 %), chromatic acid (50 %), hydrofluoric acid (10 %), lactic acid (50 %), sodium hypochlorite solution (13 %), phosphoric acid (85 %), hydrochloric acid (37 %), sulphuric acid (90 %)
- Exposure classification high / operation type L 3: Test groups 6b, 9a, additionally acetone, acetic acid (20 %), hydrogen peroxide (30 %)
- Exposure classification medium / operation type LAU 2: Test group 6
- Exposure classification medium / operation type L 2: Test groups 6a, 15

COVERAGE

2.4 – 2.6 kg/m^2

SPECIAL CONSIDERATIONS

To remove fresh contamination and to clean tools, use thinners VR 24 or VR 33 immediately. Hardened material can only be removed mechanically.

Please note the special cleansing recommendations for electrically conductive coatings.

The product is subject to the hazardous material-, operational safety-, and transport-regulations for hazardous goods. Refer to the DIN-Safety Data Sheet and the information on the labelled containers!

GISCODE: RE 30

Indication of VOC-Content: (EG-Regulation 2004/42), Maximum Permissible Value 500 g/l (2010,II,j/lb): Ready-for-use product contains < 500 g/l VOC.

Contact PENETRON HELLAS S.A. for additional information, regarding your project.

PACKAGING

EP 280 WHG is available in 8+2 kg and 24+6 kg. containers.

STORAGE / SHELF LIFE

Store in dry and frost-free conditions. Ideal storage temperature is between 50 - 68 ºF (10 - 20 ºC). Bring to a suitable working temperature before application. Tightly re-seal opened containers and use the content as soon as possible. When properly stored in a dry place in unopened and undamaged original packaging, shelf life is 12 months.

SAFE HANDLING INFORMATION

Avoid skin and eye contact. If contact is made, flush areas with lots of water and seek medical advice. Protective gloves, mask and goggles should be worn. For further information please refer to Safety Data Sheet. PENETRON HELLAS S.A. has recently updated Safety Data Sheet on the safe use of PENETRON® products. Each Safety Data Sheet contains health and safety information for the protection of your employees and your customers. KEEP OUT OF REACH OF CHILDREN.

CERTIFICATION

Classification of the fire behaviour according DIN EN 13501-01:2010-01: B_{fl-s1}.

Slip resistant scattered coating grade R11/V4 according to DIN 51130 and BGR 181.

Slip resistance grade R9 and R10, according to DIN 51130 and BGR 181.

WHG-coating with DIBt® site supervision accreditation.

Please ask for the tested system structure.

CE

KLB Kötztal Lacke + Beschichtungen GmbH
Günztalstraße 25
FRG-89335 Ichenhausen
14
EP280WHG-V2-092014
DIN EN 13813:2003-01
Synthetic resin screed mortar
DIN EN 13813: SR-B1.5-AR0.5-IR18
Fire behavior: B_{fl}-s1
Emission of corrosive substances: SR
Wear resistance BCA: AR 0.5
Adhesive tensile strength B 1.5
Impact resistance: IR 18

ELECTRICALLY CONDUCTIVE HIGHLY CHEMICALLY RESISTANT TWO-COMPONENT EPOXY RESIN COATING FOR WHG-APPLICATIONS

WARRANTY – DISCLAIMER

PENETRON HELLAS S.A. warrants that its products are manufactured under certified ISO Standard procedures, are of excellent quality and shall be free from material defects and contain all components in their proper proportion. Should any of the products be proven defective, the liability to PENETRON HELLAS S.A. shall be limited to replacement of the material proven to be defective, since the standard application procedures have been met and the suitability of the product for the particular application have been proven. PENETRON HELLAS S.A. makes no warranty as to merchantability of fitness for a particular purpose. User, after contacting the distributor of the product, shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith. While every care has been taken, the information provided in this product's data sheet make no part of any contract. All recommendations, technical data and test data contained in this product's data sheet are based upon the results of control laboratory tests or in actual field tests. However, PENETRON HELLAS S.A. makes no warranty of any kind, concerning this data. In any case, this data are given in good faith based in the PENETRON HELLAS S.A. experience, till the publication of this sheet. Due to variance in storage, handling and applications of the materials, PENETRON HELLAS S.A. accepts no liability for the results obtained. It is suggested that potential users try small applications to determine the suitability of each individual product for their specific requirements. The users should always refer to the most recent edition of the product's data sheet. PENETRON HELLAS S.A. may particularly differentiate its versions of the product's data sheet compared with those of PENETRON INTERNATIONAL LTD or respective PENETRON companies worldwide. These changes are due to text formatting, different application weathering and procedures or different product names and aim at the optimal consumer information.

PENETRON HELLAS S.A.
G.E.M.H. No: 07278001000
Athens Headquarters - Greece
50, Thrakomakedonon Ave.
136 79 Acharnes, Greece
Call Center: +30 210 2448250
info@penetron.gr, www.penetron.gr