

PPG FLOORING™ 422 ESD Epoxy Coating System

DESCRIPTION

Two-component, 100% solids epoxy system (ground plane & top coat) designed to create conductive or dissipative systems

PRINCIPAL CHARACTERISTICS

- Electrostatic coating designed for static dissipative and conductive flooring systems
- Good abrasion and impact resistance
- Excellent color and gloss retention
- Good chemical resistance
- Good flexibility
- Suitable for areas with heavy traffic
- Easy cleaning
- TYPICAL USES:
- Electronic manufacturing facilities
- Factory and warehouse floors
- Computer and server rooms
- Pharmaceutical manufacturing and hospital operating rooms

COLOR AND GLOSS LEVEL

- Gray Base, Dark Gray Base
- High gloss

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Volume solids	Ground Plane: 41 ± 2% Top Coat: 100 ± 2%
VOC (Supplied)	Ground Plane: max. 0.4 lb/US gal (approx. 50 g/l) Top Coat: max. 0.4 lb/US gal (approx. 50 g/l)
Recommended dry film thickness	Ground Plane: 3.0 - 5.0 mils (75 - 125 µm) Top Coat: 10.0 - 20.0 mils (250 - 500 µm) depending on system
Theoretical spreading rate	See spreading rate tables
Shelf life	Ground Plane Resin: at least 18 months when stored cool and dry Ground Plane Hardener: at least 24 months when stored cool and dry Topcoat Resin: at least 24 months when stored cool and dry Topcoat Hardener: at least 24 months when stored cool and dry

PPG FLOORING™ 422 ESD Epoxy Coating System

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- All surfaces must be sound, clean, free of oil, grease, dirt, mildew, curing compounds, loose and flaking paint, and other foreign substances

Concrete

- Prepare the surface in accordance with SSPC SP-13 standards
- New concrete must cure a minimum of 28 days prior to application of this product
- Test for moisture by conducting a plastic sheet test in accordance with ASTM D4263

Aged coatings

- Power tool clean in accordance with SSPC SP-3 or hand tool clean to SSPC SP-2 requirements
- Apply a test patch to confirm compatibility and adhesion

SYSTEM SPECIFICATION

- Recommended primer for concrete: PPG Flooring 912 LV (formerly known as Milamar ICO Primer LV). Refer to Technical Data Sheet

Chemical Resistances

- Motor Oil
- Brake & Hydraulic fluid
- 50% sodium hydroxide
- Gasoline
- Toluene and xylene
- Acetone
- Ammonium Hydroxide
- 10% Sulfuric Acid
- 10% Hydrochloric Acid
- Ethyl & Butyl Alcohol
- Ethyl & Butyl Acetate

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 3:1 Ground Plane; 2:1 Top Coat

- Prepare Ground Plane and Top Coat separately following the mixing procedures for both products
- Mix Part A and Part B separately to ensure uniformity. Scrape sides and bottoms of containers
- Pour all of the contents of the Part B container into the Part A container. Mix together for 5 minutes until homogeneous.
- Mix Part A and Part B together using a low speed Jiffy-type mixer

Note:

- Do not thin with solvents.

PPG FLOORING™ 422 ESD Epoxy Coating System

Application

- Full system: PPG FLR 912LV Primer, PPG FLR 422 Ground Plane, PPG FLR 422 Top Coat, and copper grounding tape
- Apply by brush, roller, notched trowel or squeegee
- The use of a brush is only recommended for touch-ups
- Ensure good ventilation during application and curing
- Where a slip resistant finished floor is required, an additional coat with the appropriate aggregate can be pre-mixed with the A- and B-components or broadcast into the wet coating
- Apply a first coat of ESD Topcoat at 8-10 mils for anchoring. Mix approximately 11 lbs (5 kg) of 90-100 mesh sand in a 4 gallon (15 L) kit of ESD Topcoat and apply a second coat of ESD Topcoat with sand at 8-10 mils. 40-50 or 20-30 mesh sand, aluminum oxide, or other larger grain sizes can be applied in a single layer of 15-20 mils.

Pot life

See ADDITIONAL DATA – Pot life

Cleaning procedure

- All application equipment must be cleaned immediately after use

ADDITIONAL DATA

Resistivity

- Ground Plane & Top Coat: 1×10^5 - 1×10^6 ohms
- Top Coat only: 1×10^6 - 1×10^8 ohms

Physical data of cured material	
Characteristic	Value
Hardness, Shore D (ASTM D2240)	76
Impact Resistance (ASTM D2794) direct / indirect	60 in-lb / 32 in-lb.
Abrasion resistance (ASTM D4060)	<50 mg
Mandrel Elongation (ASTM D522)	32% (max.)
Adhesion to Concrete (ASTM D4541)	400 - 800 PSI *

Notes:

- The value ranges stated in this Product Data Sheet are based on system processing under laboratory conditions. Equipment configurations and/or field application conditions may produce variances in final system values.
- * note: adhesion testing led to substrate failure before coating bond loss

PPG FLOORING™ 422 ESD Epoxy Coating System

Spreading rate and film thickness - 422 Ground Plane

DFT	Theoretical spreading rate
3.0 mils (75 µm)	213.9 ft ² /US gal (5.2 m ² /l)
5.0 mils (125 µm)	128.3 ft ² /US gal (3.1 m ² /l)

Spreading rate and film thickness - 422 Top Coat

DFT	Theoretical spreading rate
10 mils (250 µm)	160.4 ft ² /US gal (3.9 m ² /l)
15 mils (375 µm)	106.9 ft ² /US gal (2.6 m ² /l)
20 mils (500 µm)	80.2 ft ² /US gal (2.0 m ² /l)

Overcoating interval

Overcoating with...	Interval	59°F (15°C)	77°F (25°C)	95°F (35°C)
PPG FLR 422 ESD Ground Plane over approved primer/sealer	Minimum	8 hours	4 hours	2 hours
	Maximum	60 days	30 days	15 days
PPG FLR 422 ESD Ground Plane over itself	Minimum	6 hours	3 hours	1.5 hours
	Maximum	14 days	7 days	4 days
PPG FLR 422 ESD Top Coat over PPG FLR 422 ESD Ground Plane	Minimum	24 hours	12 hours	6 hours
	Maximum	60 days	30 days	15 days
PPG FLR 422 ESD Top Coat over itself	Minimum	24 hours	16 hours	8 hours
	Maximum	14 days	7 days	4 days

Curing time for Ground Plane

Substrate temperature	Dry to touch	Tack free time	Dry hard	Full cure
59°F (15°C)	4 hours	8 hours	12 hours	14 days
77°F (25°C)	2 hours	4 hours	6 hours	7 days
95°F (35°C)	1 hour	2 hours	3 hours	4 days

PPG FLOORING™ 422 ESD Epoxy Coating System

Curing time for Top Coat

Substrate temperature	Dry to touch	Tack free time	Light traffic	Heavy traffic	Full cure
59°F (15°C)	10 hours	20 hours	36 hours	72 hours	14 days
77°F (25°C)	4 hours	12 hours	24 hours	48 hours	7 days
95°F (35°C)	2 hours	7 hours	16 hours	36 hours	4 days

Pot life of Ground Plane

Mixed product temperature	Pot life
59°F (15°C)	60 minutes
77°F (25°C)	45 minutes
95°F (35°C)	30 minutes

Pot life of Top Coat

Mixed product temperature	Pot life
59°F (15°C)	40-50 minutes
77°F (25°C)	20-25 minutes
95°F (35°C)	10-15 minutes

SAFETY PRECAUTIONS

- Read all label and Safety Data Sheet (SDS) information prior to use

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective & Marine Coatings to supply the same product on a worldwide basis. However, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.

WARRANTY

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product. THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

PPG FLOORING™ 422 ESD Epoxy Coating System

LIMITATIONS OF LIABILITY

IN NO EVENT WILL PPG BE LIABLE UNDER ANY THEORY OF RECOVERY (WHETHER BASED ON NEGLIGENCE OF ANY KIND, STRICT LIABILITY OR TORT) FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO, ARISING FROM, OR RESULTING FROM ANY USE MADE OF THE PRODUCT. The information in this sheet is intended for guidance only and is based upon laboratory tests that PPG believes to be reliable. PPG may modify the information contained herein at any time as a result of practical experience and continuous product development. All recommendations or suggestions relating to the use of the PPG product, whether in technical documentation, or in response to a specific inquiry, or otherwise, are based on data, which to the best of PPG's knowledge, is reliable. The product and related information is designed for users having the requisite knowledge and industrial skills in the industry and it is the end-user's responsibility to determine the suitability of the product for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk. PPG has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, PPG does not accept any liability arising from any loss, injury or damage resulting from such use or the contents of this information (unless there are written agreements stating otherwise). Variations in the application environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results. This sheet supersedes all previous versions and it is the Buyer's responsibility to ensure that this information is current prior to using the product. Current sheets for all PPG Protective & Marine Coatings Products are maintained at www.ppgpmc.com. The English text of this sheet shall prevail over any translation thereof.

AVAILABILITY OF PACKAGING

Packaging

- 4-Gallon kits

