AMERCOAT® 235

DESCRIPTION

Two-component, multi-purpose phenalkamine epoxy

PRINCIPAL CHARACTERISTICS

- Universal epoxy coating suitable for ballast tanks, decks, topside, superstructure, and underwater hull
- Exceptional corrosion protection in salt and fresh water immersion and corrosive chemical environments
- Good adhesion to damp surfaces
- Heavy industry, structural steel
- Surface tolerant, compatible with water jetted surfaces

COLOR AND GLOSS LEVEL

- Offwhite, haze gray, oxide red, black, buff
- Semi-gloss

Note:

- Product is not color stable. Colors will change on exposure to sunlight. Color matches are approximate

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Volume solids	68 ± 2%
VOC (Supplied)	EPA Method 24: 2.4 lb/US gal (287.6 g/l)
Recommended dry film thickness	4.0 - 8.0 mils (100 - 200 µm) depending on system
Theoretical spreading rate	182 ft^2/US gal for 6.0 mils (4.5 m^2/l for 150 µm)
Shelf life	Base: at least 36 months when stored cool and dry Hardener: at least 36 months when stored cool and dry

Notes:

- See ADDITIONAL DATA – Overcoating intervals
- See ADDITIONAL DATA – Curing time

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RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Coating performance is, in general, proportional to the degree of surface preparation
- Coated steel; hydrojetted to SSPC SP12 / NACE No.5, VIS WJ2 L
- The coating may be used over most types of tightly adhering coatings prepared with PREP 88. A test patch is recommended for use over existing coatings
- The surface preparation recommended for the coating is to include removal of water, salt, dirt, oil, loose rust and all rust scale
- The minimum standard for nonimmersion service is Steel Structures Painting Council Standard SSPC SP-2; for immersion service, the minimum standard is SSPC SP-3, in each case a coat of AMERLOCK Sealer followed by a full coat of the coating can also be used

Steel

- Abrasive blast with an angular abrasive to an SSPC SP-10 cleanliness or higher for tank lining service. Achieve a surface profile of 2.0 – 4.0 mils (50 – 100 µm)
- All direct to metal coatings provide the maximum performance over near white blasted surfaces. There are, however, situations and cost limitations, where grit blasting to near white metal is not possible
- Designed to provide excellent protection over less than ideal surface preparation
- SSPC SP WJ-2(L) is also acceptable over a previous blasted surface
- Contact PPG for maximum allowable salt containment levels

Concrete

- Prepare in accordance with SSPC SP-13 guidelines
- Abrade surface per ASTM D-4259 to remove all efflorescence and laitance, to expose subsurface voids, and to provide a surface roughness equivalent of 60 grit sandpaper or coarser
- Test for moisture by conducting a plastic sheet test in accordance with ASTM D4263
- Fill voids as necessary with AMERCOAT 114 A epoxy filler

Galvanized steel

- Remove oil or soap film with detergent or emulsion cleaner, then use a phosphatizing conversion coating
- Lightly abrasive blast with a fine abrasive in accordance with SSPC SP-16 guidelines to achieve a profile of 1.5 – 3.0 mils (38 – 75 µm). When light abrasive blasting is not possible, galvanizing can be treated with a suitable zinc phosphate conversion coating.
- Galvanizing that has at least 12 months of exterior weathering and has a rough surface with white rust present may be over-coated after power washing and cleaning to remove white rust and other contaminants
- The surface must have a measurable profile
- A test patch is recommended to determine compatibility and adhesion
- Not recommended over chromate sealed galvanizing without blasting to thoroughly remove chromates. Adhesion problems may occur

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Non-ferrous metals and stainless steel

- Abrasive blast in accordance with SSPC SP-16 guidelines to achieve a uniform and dense 1.5-4.0 mil anchor profile. Size and hardness of abrasive should be adjusted as necessary based on the hardness of the substrate
- Aluminum may be treated with a surface treatment compliant with Mil-DTL-5541 or equivalent (non-immersion applications only).

Aged coatings

- All surfaces must be clean, dry, tightly bonded and free of all loose paint, corrosion products or chalky residue
- Abrade surface, or clean with PREP 88. This product is compatible over most types of properly applied and tightly adhering coatings, however, a test patch is recommended to confirm compatibility

Repair

- Prepare damaged areas to original surface preparation specifications, feathering edges of intact coating. Thoroughly remove dust or abrasive residue before touch-up.

Substrate temperature and application conditions

- Surface temperature during application should be between 20°F (-7°C) and 140°F (60°C)
- Surface temperature during application should be at least 5°F (3°C) above dew point
- Surface must be clean, uniform, sound, and free from contamination (such as oil, grease, rust, scale, or deposits)
- Relative humidity during application and curing should not exceed 85%

SYSTEM SPECIFICATION

- Primers: Inorganic zinc primers or zinc rich epoxies (atmospheric service)
- Topcoats: AMERCOAT 450 series polyurethanes, AMERSHIELD, PSX 700, AMERCOAT 229T, PITTHANE polyurethanes,

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 4:1

- Pre-mix base component with a pneumatic air mixer at moderate speeds to homogenize the container. Add hardener to base and agitate with a power mixer for 1–2 minutes until completely dispersed
- This product may develop a "false body" which can be broken down with mechanical agitation prior to thinning.

Application

- Area should be sheltered from airborne particulates and pollutants
- Avoid combustion gases or other sources of carbon dioxide that may promote amine blush and ambering of light colors
- Ensure good ventilation during application and curing
- Provide shelter to prevent wind from affecting spray patterns

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Table of Induction time

Mixed product induction time	
Mixed product temperature	**Induction time**
50°F (10°C)	30 minutes
70°F (21°C)	15 minutes

Pot life

4.5 hours at 70°F (21°C)

Note:

- See ADDITIONAL DATA – Pot life

Air spray

Recommended thinner

THINNER 91-82 (AMERCOAT T-10) or PPG 91-92 thinner

Volume of thinner

0 - 15%

Airless spray

Recommended thinner

THINNER 91-82 (AMERCOAT T-10) or PPG 91-92 thinner

Nozzle orifice

0.019 – 0.023 in (approx. 0.48 – 0.58 mm)

Nozzle pressure

16.5 - 20.7 MPa (approx. 166 - 207 bar; 2400 - 3000 p.s.i.)

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Brush/roller

- Use a high quality natural bristle brush and/or solvent resistant, 3/8" nap roller. Ensure brush/roller is well loaded to avoid air entrainment. Multiple coats may be necessary to achieve adequate film-build

Recommended thinner

AMERCOAT T-10 thinner or PPG 91-92 thinner

Volume of thinner

0 – 5%

Cleaning solvent

- THINNER 90-58 (AMERCOAT 12)

ADDITIONAL DATA

Overcoating interval for DFT up to 5.0 mils (125 µm)						
Overcoating with...	**Interval**	**20°F (-7°C)**	**32°F (0°C)**	**50°F (10°C)**	**70°F (21°C)**	**90°F (32°C)**
itself	Minimum	28 hours	16 hours	8 hours	4 hours	2 hours
	Maximum	3 months	3 months	1.5 months	30 days	15 days
polyurethane topcoat	Minimum	28 hours	16 hours	8 hours	4 hours	2 hours
	Maximum	14 days	10 days	7 days	5 days	4 days
PSX 700	Minimum	28 hours	16 hours	8 hours	4 hours	2 hours
	Maximum	30 days	30 days	21 days	14 days	8 days

Notes:

- Surface must be clean and dry. Any contamination must be identified and removed. A detergent wash with PREP 88 or equivalent is required prior to application of topcoats after 30 days of exposure. However, particular attention must be paid to surfaces exposed to sunlight where chalking may be present. In those situations, a further degree of cleaning may be required. PPG Technical Service can advise on suitable cleaning methods. If maximum recoat/topcoat time is exceeded, then roughen surface.
- Alkyd coatings and waterborne acrylic coatings should be applied after the film is dry to handle and not greater than three times dry to handle time
- Antifouling coatings should be applied when the previous coat of epoxy is tack free, but impressionable with moderate finger tip pressure
- Dry times are dependent on air and surface temperatures as well as film thickness, ventilation, and relative humidity. Maximum recoating time is highly dependent upon actual surface temperatures – not simply air temperatures. Surface temperatures should be monitored, especially with sun-exposed or otherwise heated surfaces. Higher surface temperatures shorten the maximum recoat window

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Curing time for DFT up to 5.0 mils (125 µm)			
Substrate temperature	**Dry to touch**	**Dry to handle**	**Service- water immersion**
20°F (-7°C)	28 hours	62 hours	14 days
32°F (0°C)	20 hours	45 hours	10 days
50°F (10°C)	10 hours	22 hours	7 days
70°F (21°C)	5 hours	10 hours	5 days
90°F (32°C)	3 hours	5 hours	4 days

Note:

- On underwater hull systems, the vessel can be launched after the specified dry-to-launch period indicated in the application instructions for the antifouling

Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
50°F (10°C)	6 hours
70°F (21°C)	4.5 hours
90°F (32°C)	2 hours

Product Qualifications

- NAVSEA Mil-PRF-23236(D) Class 7, Type V, Grade B and C
- NAVSEA Mil-PRF-24647 underwater hull
- Marintek Class B1 for use in saltwater ballast tanks
- Tested by NOHC as being suitable as a lining for grain storage containers
- Meets USDA criteria for incidental food contact

SAFETY PRECAUTIONS

- Read all label and Safety Data Sheet (SDS) information prior to use
- This is a solvent-borne paint and care should be taken to avoid inhalation of spray mist or vapor, as well as contact between the wet paint and exposed skin or eyes

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.

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REFERENCES

- Information sheet | Explanation of product data sheets

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.

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