AMERCOAT®

Protective Coatings

Amercoat 240
Universal Epoxy Coating

Product Data/ Application Instructions

- **Formulated for direct-to-metal application with excellent substrate wetting while retaining excellent edge coverage**
- **Exceptional corrosion protection in salt and fresh water immersion and corrosive chemical environments**
- **Surface tolerant, lowers the cost of surface preparation**
- **Excellent adhesion to tight rust**
- **Compatible with water jetted or hand power tool cleaned surfaces**
- **Low temperature cure down to –18°C/0°F without additives or alternate curing agents**
- **Fast dry-to-recoat and rapid handling properties**
- **High-build (up to 300 microns) in one coat**
- **Abrasion resistant**

Very low solvent content meets VOC requirements, reduces the risk of pinholing and solvent entrapment at the substrate-coating interface, often a major cause of coating failure with conventional epoxies and lower solids systems.

Typical Uses

Tank Linings and Pipe Coatings
- Ballast and fuel tanks
- Bilges, wet voids and other damp areas
- Crude oil tanks

Ships, Offshore and Marine Structures
- Exterior hull above and below waterline
- Decks and superstructures, piping and equipment
- Interior surfaces

Fabrication and New Construction
- Heavy industry, structural steelwork, bridges, tankage
- Speeds up production, even at low temperatures

A single coat multi-purpose, surface-tolerant coating

Qualifications

- Classified by Marintek, as class B1 for use in ballast water tanks
- Meets all the requirements for low flame spread in compliance with the International Convention for the Safety of Life at Sea (SOLAS), 1974. according IMO resolution MSC 61(67)
- Tested by NOHC as being suitable as a lining for grain storage containers.
- Lloyd's Register – Provisionally recognized as acceptable for saltwater ballast tanks and double bottom tanks; Certificate Number MATS/3404/1.
- NAVSEA-MILPRF-23236(C) Class 7, Type VII, Grade C
- NAVSEA-MIL-PRF-24647

Physical Data

Finish	Semi-gloss
Colour*	Buff, Haze Grey, Pastel Green, Oxide Red, White
Components	2
Curing mechanism	Solvent release and chemical reaction between components
Volume solids	87% (ISO 3233)
Dry film thickness (per coat)	100 – 300 microns (4 –12 mils)
Number of coats	1 or 2

Theoretical coverage	m^2/l	ft^2/gal
25 microns (per mil)	33.5	1395
150 microns (6 mils)	5.6	233

VOC**	
EC SED 1999/13/EC	102 g/kg (153 g/l)
UK PG6/23(92) Appendix 3	145 g/l (1.2 lbs/gal)

Temperature resistance	dry	
	°C	°F
continuous	121	250

Flash point (SETA)	°C	°F
Amercoat 240 resin	50	122
Amercoat 240 cure	59	138
Amercoat 65	27	81
Amercoat 12	24	73

* Surface discoloration may occur upon exposure to sunlight, elevated temperatures or chemicals. However, this does not impact performance.

** VOC figures are quoted according to both the EC directive 1999/13/EC which are theoretically calculated figures and the UK PG6/23(92) Appendix 3 which are practically determined figures.

Suitable for the following cargoes:

Crude Oil	Fuel Oils
Sour Crude Oil	Bunker Oil
Drilling mud	Brine
Aviation fuel	Dry bulk commodities
50% Sodium hydroxide	Sea water
Fresh water	

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Surface Preparation
Coating performance is, in general, proportional to the degree of surface preparation. Abrasive blasting is usually the most effective and economical method. When this is impossible or imprac-tical, Amercoat 240 can be applied over mechanically cleaned surfaces. All surfaces must be clean, dry and free of all contaminants, including salt deposits. Contact PPG for maximum allowable salt containment levels.

Steel—Remove all loose rust, dirt, grease or other contaminants by one of the following depending on the degree of cleanliness required: ISO 8501-1 St-2, St-3, Sa 1, Sa 2, Sa 2½ (SSPC-SP2, 3, 6, 7 or 10). These minimum surface preparation standards apply to steel that has been previously abrasive blasted. The choice of surface preparation will depend on the system selected and end-use service conditions.
For more severe service and immersion, clean to SSPC-SP10 (ISO 8501-1 Sa 2½). Blast to achieve an anchor profile of 2-3 mils (50-75 microns) as indicted by a Keane-Tator Surface profile Comparator or Testex Tape. Previously blasted steel may be ultra-high pressure water jetted to NACE No. 5/SSPC-SP 12 WJ-2L. The wet surface can be dried by blowing with dry compressed air giving special attention to horizontal surfaces and recesses.

Pre-primed steelwork —Amercoat 240 can be applied over steelwork shop primed with inorganic zinc silicate. Surfaces must be clean, dry and free of oil, grease, salts and other contamination by detergent washing and high pressure water washing. Specific attention should be paid to removal of white zinc salts. Weld areas. damaged and corroded areas should be blast cleaned to ISO 8501-1 Sa 2 (SSPC-SP 6). Overall sweep-blasting may be necessary for widespread breakdown of the zinc silicate shop primer.

Aluminum—Remove oil, grease or soap film with neutral detergent or emulsion cleaner, treat with Alodine® 1200, Alumiprep® or equivalent, or blast lightly with fine abrasive.

Galvanizing—Remove oil or soap film with detergent or emulsion cleaner, then use zinc treatment such as Galvaprep® or equivalent, or blast lightly with fine abrasive.

Concrete—Light abrasive blast per ASTM D4259 to remove all chalk, and surface glaze or laitance. If blasting is not possible, acid etch uncoated concrete per ASTM D4260 to obtain a glaze-free surface with a slightly granular texture. Rinse with clean water and allow to dry thoroughly

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. Amercoat 240 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.

Typical Systems

1st coat	2nd coat	3rd coat
Amercoat 240	None	None
Amercoat 240	Amercoat 229 Series, 450 Series, PSX 700	None
Amercoat 240	Amercoat 240	None
Dimetcote 9 Series or Amercoat 68 Series	Amercoat 240	None
Dimetcote 9 Series, Amercoat 68 Series	Amercoat 240	Amercoat 450 Series, PSX 700
Tank Coating System- Two coats of Amercoat 240 at 100 to 300 microns (4 to 12 mils) per coat, plus stripe coating over sharp edges, cutouts and welds, to give a total of 300 to 400 microns (12 to 16 mils) . Use contrasting colours for each coat and stripe coat.		
* *Outside of the U.S.* a tiecoat such as Amercoat 71TC is required. In the U.S. tiecoats are typically avoided for VOC compliance.		

Application Data

Applied over	Steel, concrete, aluminium, galvanizing
Surface preparation	
Steel	Abrasive blasting, manual preparation or UHP water jetting. ISO 8501-1 St-2,St-3,Sa 1,Sa 2, Sa 2 ½ (SSPC-SP2,SP 3,SP 7,SP6,,SP 10)
Concrete	ASTM D4259 or 4260
Aluminium	Alodine®, Alumiprep® or light abrasive blast
Galvanizing	Galvaprep® or light abrasive blast
Method	Airless or conventional spray. brush or roller (may require additional coats)
Mixing ratio (by volume)	4 parts resin 1 part cure
Induction time	15 minutes at 21°C/70°F
Environmental conditions	
air and surface temperature	-7° to 50°C (20° to 122 °F)
material temperature	10° to 27°C (50° to 80°F)

Surface temperatures must be at least 3°C/5°F above dew point to prevent condensation. At freezing temperatures, surface must be free of ice.

Thinner	Amercoat 65
Equipment cleaner	Thinner or Amercoat 12

Pot life (including induction time)

°C/°F		
32/90	27/80	21/70
40 min.	60 min	90 min.

Drying time at 150 microns (hours)

	°C/°F				
	32/90	21/70	10/50	0/32	-5/16
dry to touch	3	5	10	24	28
dry hard	6	8	13	30	48

Cure to immersion (days)

°C/°F					
49/120	32/90	21/70	10/50	0/32	-7/20
2	3	7	7	7	7

These cure to immersion times refer to tanks with forced ventilation. On underwater hull systems with ABC Series antifoulings, the vessel can be launched after the specific dry-to-launch period indicated in the application instructions for the antifouling.

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Recoat/Topcoat time at 150 microns (6 mils) dft	°C/°F				
minimum (hours)	32/90	21/70	10/50	0/32	-7/20
Amercoat 240	2	5	8	14	28
Amercoat 450 Series or PSX 700	3	5	7	12	40
.....				°C/°F	
maximum (months)*	32/90	21/70	10/50	0/32	-7/20
Amercoat 240	6	6	6	6	6
Amercoat 450 Series, PSX 700	3	3	3	3	3

Drying 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 ambient air temperatures. Surface temperatures should be monitored, especially with sun-exposed or otherwise heated surfaces. Higher surface temperatures shorten the maximum recoat window.

* Surface must be clean and dry. Any contamination must be identified and adequately 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 that have been exposed to sunlight and 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 the maximum recoat/topcoat time is exceeded, then roughen surface.

Application Equipment

The following is a guide; suitable equipment from other manufacturers may be used. Changes in pressure, hose and tip size may be needed for proper spray characteristics.

AIRLESS SPRAY – Standard equipment with pump ratio of 45:1 or larger, with a 0.021- to 0.025-inch fluid tip, $^{3}/_{8}$“ (9mm) ID hose with 15 meters (50 ft) maximum length. Long hose runs or location of work at heights 6 – 9 meters (20-30 feet) higher than the pump location may require higher pump ratios, increased hose diameter or other adjustments. A typical arrangement for shipyard use would include a 68:1 (or higher) pump ratio with ½” (12 mm) to ¾” (18 mm) fluid hose.

CONVENTIONAL SPRAY – Standard conventional air spray equipment. A moisture and oil trap in the main air supply line, a pressure material pot, and separate regulators for air and fluid pressure are recommended.

POWER MIXER – Jiffy Mixer powered by an air or explosion proof electric motor.

BRUSH OR ROLLER – Additional coats may be required to attain proper thickness. (Brushing and rolling typically give about 75 microns [3 mils] dft.)To obtain maximum performance, adhere to all application instructions, precautions, conditions and limitations. For conditions outside the requirements or limitations described, contact your PPG representative.

Application procedure

1. Flush all equipment with thinner or Amercoat 12 before use. Stir resin using an explosion-proof power mixer to disperse into a homogeneous mixture.
2. Add cure to resin. Mix thoroughly until uniformly blended to a workable consistency. Induction time (at 21°C/70°F): 15 minutes.
3. Do not mix more material than can be used within the expected potlife, 90 min at 21°C/70ºF. Higher material temperatures will shorten the potlife considerably.
4. For optimum application, material should be between 10 to 32°C (50 - 90°F).
5. Use only Amercoat 65 thinner at no more than 10% per volume.
6. Below 10°C/50°F additional thinning may be needed and multiple coats required to achieve specified thickness.
7. To minimize orange peel appearance, adjust conventional spray equipment to obtain adequate atomization at lowest air pressure.
8. Apply a wet coat in even, parallel passes with 50 percent overlap to avoid holidays, bare areas and pinholes. If required, cross spray at right angles.
9. When applying directly over inorganic zincs or zinc-rich primers, a mist coat/full coat technique may be required to minimize bubbling. This will depend on the age of the primer, surface roughness and conditions during curing.
10. Ventilate confined areas with clean air during application, between coats, and while curing the final coat. Prevent moisture condensation on the surface between coats.
11. Repair damaged areas by brush or spray.
12. Clean equipment with thinner or Amercoat 12 immediately after use.

Note: Consult Code of USA Federal Regulations Title 29, Labor, parts 1910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable USA federal, state and local regulations on safe practices in coating operations.
For compliance with IMO Standard for Ballast Tank Coatings please refer to the Project Ballast Tank Specification

Shipping Data

European manufacture

Packaging 20 Liter unit
- Resin..... 16l (4,22 gal) in 20l can
- Cure ..... 4l (1,06 gal) in 5l can

Shipping weight (approx)
- resin ..... 28.2 kg/62.1 lbs
- cure..... 7.2 kg/15.9 lbs

Packaging 5 Liter unit
- Resin..... 4l (1.06 gal) in 4l can
- Cure ..... 1l (0.26 gal) in 1l can

Shipping weight (approx)
- resin ..... 7.2 kg/15.9 lbs
- cure..... 1.1 kg/2.42 lbs

Packing unit U.S.

Packaging unit-US	1 gal	5 gal
Shipping weight (approx.)	lbs/kg	lbs/kg
1-gal unit		
240 resin	11.8/5.4	5.4/2.45
240 cure	2.0/0.9	0.9/0.41
5-gal unit		
240 resin	59.0/26.80	26.8/12.20
240 cure	9.1/4.10	4.1/1.86

Shelf life ..... 1 year from shipment date when stored indoors in unopened, original containers at 5 - 40°C (41-104°F).

Numerical values are subject to normal manufacturing tolerances, colour and testing variances. Allow for application losses and surface irregularities.
This mixed product is photochemically reactive as defined by the South Coast Air Quality Management District’s Rule 102 or equivalent regulations.

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Safety
Since improper use and handling can be hazardous to health and cause of fire or explosion, safety precautions included with Product Data/Application Instruction and Material Safety Data Sheet must be observed during all storage, handling, use and drying periods.

Warranty
PPG warrants its products to be free from defects in material and workmanship. PPG's sole obligations and Buyer's exclusive remedy in connection with the products shall be limited, at PPG's option, to either replacement of products not conforming this warranty or credit to Buyer's account in the invoiced amount of the non-conforming products. 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, or one year from the delivery date, 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 makes no other warranties concerning the product. No other warranties, whether express, implied or statutory, such as warranties of merchantability or fitness particular purpose, shall apply. In no event shall PPG be liable for consequential or incidental damages.

Any recommendations or suggestion relating to the use of the products made by PPG, whether in its technical literature, or response to specific enquiry, or otherwise, is based on data believed to be reliable; however, the products and information are intended for use by Buyer's having requisite skill and know-how in the industry, and therefore it is Buyer to satisfy itself of the suitability of the products for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk. Variation in environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results.

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Due to PPG's policy of continuous product improvement, the information contained in this Product Data/Application Instructions sheet is subject to change without notice. It is the Buyer's responsibility to check that this issue is current prior to using the product. For the most up-to-date Product Data/Application Instructions always refer to the PPG Protective & Marine Coatings website at www.ppgpmc.com

To avoid any confusion that may arise through translation into other languages, the English version of the Product Data/Application Instructions will be the governing literature and must be referred to in case of deviations with product literature in other languages.

Condition of Sale
All our transactions are subject to our Terms and Conditions of Sale.