AMERCOAT® 238

DESCRIPTION

Reinforced abrasion resistant epoxy

PRINCIPAL CHARACTERISTICS

- Outstanding impact and abrasion resistance
- Qualified as a high durability deck coating
- Suitable for hull exterior for ice-going ships
- Low VOC, low HAPs
- Good drying properties even at low temperatures

COLOR AND GLOSS LEVEL

- Dark Gray, Haze Gray, Oxide Red
- Black
- Semi-gloss

Note: Epoxy coatings will chalk and fade upon exposure to sunlight, elevated temperatures, or chemical exposure. Discoloration and normal chalking does not impact performance. Light colors will darken over time. Some batch-to-batch variation in color is to be expected. Color matches are approximate.

BASIC DATA AT 68°F (20°C)

Data for mixed product	
Number of components	Two
Volume solids	77 ± 2%
VOC (Supplied)	max. 1.7 lb/US gal (approx. 204 g/l)
Recommended dry film thickness	8.0 - 12.0 mils (200 - 300 µm) depending on system
Theoretical spreading rate	154 ft^2/US gal for 8.0 mils (3.9 m^2/l for 200 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

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Coating performance is, in general, proportional to the degree of surface preparation

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Steel

- Remove weld spatter, protrusions, and laminations in steel. Grind welds smooth in accordance with NACE RP-0178
- Remove all surface contaminants, oil and grease in accordance with SSPC SP-1
- Abrasive blast cleaning to SSPC SP-6 standards will give optimum performance
- Achieve a surface profile of 2.0 - 5.0 mils
- For maintenance and repair in atmospheric service, the product can be applied over surfaces prepared in accordance with SSPC SP-11
- AMERCOAT 114 A may be used as a pit filler for severely pitted steel and surface discontinuities
- Check with PPG technical service for the maximum allowable soluble salt level for water immersion service. This will vary based on the water chemistry and service temperatures

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

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 and repairs

- Ensure the coating system is sound and well adhered
- Do not apply over thermoplastic coatings or coatings that exhibit poor solvent resistance
- For use over existing coatings test patch is recommended
- Sweep blast or otherwise thoroughly abrade the existing coating in accordance with SSPC SP-7
- Alternately, PREP 88 may be used to prepare some existing coatings. Please refer to PREP 88 data sheet for details
- Feather the edges of tightly adhered, in-tact coatings at the perimeter of repair areas
- For touch up and repair, power tool cleaning in accordance with SSPC SP-11 is acceptable

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.

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Substrate temperature and application conditions

- Surface temperature during application should be between 32°F (0°C) and 140°F (60°C)
- Surface temperature during application should be at least 5°F (3°C) above dew point
- Ambient temperature during application and curing should be between 32°F (0°C) and 120°F (49°C)
- Relative humidity during application should be between 0% and 85%

SYSTEM SPECIFICATION

- Primers: No primer required. Inorganic zinc primers or zinc rich epoxies may be used for severe atmospheric service. Optimum impact resistance is achieved by specifying AMERCOAT 238 directly to blasted steel.
- Topcoats: AMERCOAT 450H, AMERCOAT 229T, AMERSHIELD, PSX 700, PSX One

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 80:20 (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
- Strain through 30 mesh

Induction time

Mixed product induction time	
Mixed product temperature	**Induction time**
50°F (10°C)	40 minutes
70°F (21°C)	20 minutes
90°F (32°C)	10 minutes

Pot life

4 hours at 70°F (21°C)

Note: See ADDITIONAL DATA – Pot life

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

Material temperature

Material temperature during application should be between 40°F (4°C) and 80°F (27°C)

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Airless spray

- 45:1 pump or larger
- Hardened spray tips and pump internals are recommended as the reinforcement in the product is abrasive

Recommended thinner

THINNER 91-82 (AMERCOAT T-10)

Nozzle orifice

0.025 – 0.031 in (approx. 0.64 – 0.78 mm)

Nozzle pressure

17.2 - 27.6 MPa (approx. 173 - 276 bar; 2500 - 4000 p.s.i.)

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
- For small areas only (touch up and repair)

Recommended thinner

AMERCOAT T-10 THINNER

Volume of thinner

0 – 5%

Cleaning solvent

AMERCOAT 12 CLEANER

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ADDITIONAL DATA

Overcoating interval for DFT up to 10.0 mils (250 µm)						
Overcoating with...	**Interval**	**20°F (-7°C)**	**32°F (0°C)**	**50°F (10°C)**	**70°F (21°C)**	**90°F (32°C)**
epoxy coatings	Minimum	Not recommended	38 hours	14 hours	6 hours	3.5 hours
	Maximum	Not recommended	21 days	18 days	12 days	7 days
urethane and PSX	Minimum	Not recommended	38 hours	14 hours	6 hours	3.5 hours
	Maximum	Not recommended	7 days	6 days	4 days	60 hours

Notes:

- Antifouling coatings should be applied when the previous coat of epoxy is tack free, but impressionable with moderate finger tip pressure
- 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
- 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
- Surface must be clean and dry. Any contamination must be identified and removed. 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

Curing time for DFT up to 10.0 mils (250 µm)					
Substrate temperature	**Dry to touch**	**Dry to handle**	**Service- still water immersion**	**Light impact/abrasion**	**Heavy impact/abrasion**
32°F (0°C)	60 hours	7 days	Not recommended	Not recommended	Not recommended
40°F (4°C)	48 hours	3 days	4 days	7 days	28 days
50°F (10°C)	24 hours	28 hours	48 hours	4 days	21 days
70°F (21°C)	12 hours	16 hours	24 hours	48 hours	10 days
90°F (32°C)	4 hours	12 hours	18 hours	36 hours	5 days

Note: Light impact / abrasion is consistent with floating debris or soft bumper impacts. For heavy impact and abrasion resistance, the product can be immersed in accordance with the still water immersion times and allowed to cure underwater for the duration of the times listed fro the heavy impact abrasion. The water temperatures should then be referenced. It is recommended that impressed current systems not be activated until the cure for heavy impact/abrasion service is reached.

Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
50°F (10°C)	6 hours
70°F (21°C)	4 hours
90°F (32°C)	2 hours

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SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets
- 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 and 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.

REFERENCES

• CONVERSION TABLES	INFORMATION SHEET	1410
• EXPLANATION TO PRODUCT DATA SHEETS	INFORMATION SHEET	1411

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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Packaging: Available in 1-gallon and 5-gallon kits

Product code	Description
AT238-20	Haze gray base
AT238-28	Dark Gray Base
AT238-72	Oxide Red Base
AT238-9	Black Base
AT238-B	Hardener