# AMERCOAT® 238

April 2013
Revision of October 2012

**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
- Excellent low temperature cure
- Up to 12 mils dft in one coat

**COLOR AND GLOSS**

Haze gray, Dark gray, Oxide red, Black

Semi-gloss

* *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**

| | |
|---|---|
| Volume solids | 77% ± 3% |
| VOC | 1.7 lbs/gal (206 g/L) |
| Recommended Dry film thickness (per coat) | 8 – 12 mils (200-300 microns) |
| Theoretical Spread Rate | @ 8 mils (5.6 $m^2/l$) 154 $ft^2/gal$ |
| Components | 2 |
| Shelf Life | 3 years from date of manufacture |

**SURFACE PREPARATION**

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

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 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.

  For maintenance and repair in atmospheric service, the product can be applied over surfaces prepared in accordance with SSPC SP-11.

  *Amercoat* 114A 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 / clean surface in accordance with SSPC SP-13 guidelines. Abrade surface per ASTM D-4259 to remove all efflorescence and laitance, to expose sub-surface 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* 114A 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 thermo-plastic coatings or coatings that exhibit poor solvent resistance. A 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. Power tool clean the existing steel in accordance with SSPC SP-11 .

| | | |
|---|---|---|
| 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* 238 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. |

## ENVIRONMENTAL CONDITIONS

| | |
|---|---|
| Ambient temperatures | 32°F to 120°F (0°C to 49°C) |
| Material temperatures | 40°F to 80°F (5°C to 27ºC) |
| Relative humidity | 0 – 85% |
| Surface temperature | 32°F to 140°F Surface temperature must be at least 5°F above the dew point temperature. |
| General air quality | Area should be sheltered from airborne particulates and pollutants. Avoid combustion gases or other sources of carbon dioxide that may promote amine blush. Ensure good ventilation during application and curing. Provide shelter to prevent wind from affecting spray patterns. |

## INSTRUCTIONS FOR USE

Mixing ratio by volume

4 parts base to 1 part hardener

Pre-mix pigmented components with a pneumatic air mixing 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.

Pot life

| | 50°F | 70°F | 90°F |
|---|---|---|---|
| Pot life | 6 hours | 4 hours | 2 hours |
| Induction time | 40 minutes | 20 minutes | 10 minutes |

| | |
|---|---|
| Airless spray | 45:1 pump or larger, (68:1 is most common), 0.025 – 0.031 fluid tip, 2,500 – 4,000 psi), Hardened spray tips and pump internals are recommended as the reinforcement in the product is abrasive. |
| Brush & roll | 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. Brush/roller application is recommended for minor touch up areas only. |
| Thinner | *Amercoat* T-10 thinner |
| Cleaning solvent | 12 Cleaner |
| 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, Amershield, *PSX* 700, *Amercoat* 229T, *PSX* One |
| Safety precautions | For paint and recommended thinners see safety sheet 1430, 1431 and relevant material safety data sheets<br>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. |

## DRY/CURE TIMES

*Amercoat* 238 @ 10 mils dft

| | 32°F | 40°F | 50°F | 70°F | 90°F |
|---|---|---|---|---|---|
| Dry hard (hrs) | 60 | 48 | 24 | 12 | 4 |
| Dry through (hrs) | 168 | 72 | 28 | 16 | 12 |
| Dry to recoat / topcoat (hrs)* | 38 | 32 | 14 | 6 | 3.5 |
| Max recoat, epoxy Immersion (days) | 21 | 21 | 18 | 12 | 7 |
| Max topcoat, urethanes, PSX** | 7 days | 7 days | 6 days | 4 days | 2.5 days |
| Cure to still water immersion | NR | 4 days | 2 days | 24 hours | 18 hours |
| Cure to light Impact/abrasion*** | NR | 7 days | 4 days | 2 days | 36 hours |
| Cure to heavy impact/ abrasion*** | NR | 28 days | 21 days | 10 days | 5 days |

* *Antifouling coatings should be applied when the previous coat is tack free, but impressionable with moderate finger tip pressure.*

*Alkyd coatings and waterborne arcylic coatings should be applied after the film is dry through and no greater than three times the dry through 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. 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.*

*** *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.*

## AVAILABILITY

Packaging: 1-gallon and 5-gallon kits

Product codes:

| | |
|---|---|
| AT238-20 | Haze Gray base |
| AT238-28 | Dark Gray base |
| AT238-72 | Oxide Red base |
| AT238-9 | Black base |
| AT238-B | Hardener |

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