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✉️ uksales@newguardcoatings.com
📞 +44 1937 586311

DESCRIPTION
Two-component, high solids glass flake reinforced polyamine cured epoxy coating

PRINCIPAL CHARACTERISTICS
• Designed to prevent corrosion under insulation (CUI) of carbon steel and stainless steel
• Pass cryogenic cyclic test from -196°C (-321°F) to 200°C (392°F)
• Glass-flake reinforced for improved impact and abrasion resistance
• Excellent resistance to corrosion
• Long-term protection at areas subject to heavy wear and tear
• Very low water permeability, due to glass flake barrier
• Suitable for immersion service
• Compatible with cathodic protection systems
• Up to 750 µm (30.0 mils) DFT in a single coat

COLOR AND GLOSS LEVEL
• Standard and custom colors
• Eggshell

Note: Epoxy coatings will chalk and fade with exposure to sunlight. Light colors are prone to ambering to some extent. Note that product tinted to custom colors are not recommended for immersion service. Only use factory grind batches for immersion

BASIC DATA AT 20°C (68°F)

<table>
<thead>
<tr>
<th>Data for mixed product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of components</td>
</tr>
<tr>
<td>Mass density</td>
</tr>
<tr>
<td>Volume solids</td>
</tr>
<tr>
<td>VOC (Supplied)</td>
</tr>
<tr>
<td>Temperature resistance (Continuous)</td>
</tr>
<tr>
<td>Temperature resistance (Intermittent)</td>
</tr>
<tr>
<td>Recommended dry film thickness</td>
</tr>
<tr>
<td>Theoretical spreading rate</td>
</tr>
<tr>
<td>Dry to touch</td>
</tr>
<tr>
<td>Overcoating Interval</td>
</tr>
<tr>
<td>Full cure after</td>
</tr>
</tbody>
</table>
AMERLOCK® 400 GF / SIGMASHIELD™ 400

Data for mixed product

<table>
<thead>
<tr>
<th>Shelf life</th>
<th>Base: at least 24 months when stored cool and dry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hardener: at least 36 months when stored cool and dry</td>
</tr>
</tbody>
</table>

Notes:
- See ADDITIONAL DATA – Spreading rate and film thickness
- See ADDITIONAL DATA – Curing time
- See ADDITIONAL DATA – Overcoating intervals
- Intermittent temperature resistance should be less than 5% of the time, and maximum 24 hours
- Maximum temperature in table is for dry condition, please find "SYSTEM SPECIFICATION" for CUI condition
- U.S. and Canada consist of 3 components (Post-add AMERCOAT 880 Glassflake additive with Amerlock 400)

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Coating performance is proportional to the degree of surface preparation. Remove all loose paint, mill scale, and rust. The surface to be coated must be dimensionally stable, dry, clean and free of grease, oil, and other foreign materials. When proper abrasive blast surface preparation is not practical, surfaces should be chipped clean and wire brushed to bare, clean material

Carbon steel
- For immersion service: steel; blast cleaned to ISO-Sa2½ (SSPC SP-10)
- For atmospheric service, abrasive blast to ISO-Sa2½ or minimum SSPC SP-6, power tool cleaned to ISO-St3 (SSPC SP-3) or hand tool cleaned to ISO-St2 (SSPC SP-2) or ultra high pressure water jet to SSPC SP WJ-2(L) / NACE WJ-2(L)

Concrete / Masonry
- Remove grease, oil and other penetrating contaminants according to ASTM D4258
- Abrade the surface per ASTM D4259 to remove all chalk and surface glaze or laitance. Achieve surface profile - ICRI CSP 3 to 5
- AMERCOAT 114 A may be used as a pit filler. Check with PPG Technical Service for alternative
- Maximum recommended moisture transmission rate is 3 lbs / 1,000 ft2 / 24 hours by moisture transmission test (ASTM F1869, calcium chloride test or by ASTM D4263, plastic sheet test)
- Alternatively, ASTM D4944 (Calcium Carbide Gas method) can be used, moisture content should not exceed 4%

Galvanized steel
- Remove oil or soap film with detergent or emulsion cleaner
- 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 had at least 24 months of exterior weathering may be coated after power washing to remove all contaminants and white rust
AMERLOCK® 400 GF / SIGMASHIELD™ 400

Non-ferrous metals and stainless steel
- Remove all rust, dirt, moisture, grease or other contaminants from the surface
- Lightly abrasive blast with a fine abrasive in accordance with SSPC SP-16 guidelines to achieve a profile of 40 - 100 µm (1.5 - 4.0 mils)

Substrate temperature
- Substrate temperature during application and curing should be above 10°C (50°F)
- Substrate temperature during application and curing should be at least 3°C (5°F) above dew point

SYSTEM SPECIFICATION
Insulated and non-insulated service: applied direct to carbon steel or stainless steel up to 204°C (400°F)
- AMERLOCK 400 GF / SIGMASHIELD 400 : 250 µm (10.0 mils) DFT one coat system

Notes:
- Do not exceed 400 µm (16.0 mils) total DFT
- Top coat may need for sunlight directly exposed condition. Please contact your PPG representative for suitable top coats
- For carbon steel surface treatment, ISO-Sa2½ or min. SSPC SP-6 is recommended. But SSPC SP-15 is allowed for repair
- For hot application from 66°C (150°F) to 150°C (300°F), please refer to “HOT APPLY EPOXIES” INFORMATION SHEET

INSTRUCTIONS FOR USE
Mixing ratio by volume: base to hardener 50:50 (1:1)
- The temperature of the mixed base and hardener should preferably be above 15°C (59°F), otherwise extra thinner may be required to obtain application viscosity
- Adding too much thinner results in reduced sag resistance and slower cure
- Very good mechanical mixing of base and hardener is essential
- Thinner should be added after mixing the components
- Filters should be removed from spray equipment

Pot life
2 hours at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life
AMERLOCK® 400 GF / SIGMASHIELD™ 400

Air spray

Recommended thinner
THINNER 21-06

Volume of thinner
6 - 10%, depending on required thickness and application conditions

Nozzle orifice
1.5 – 2.0 mm (approx. 0.060 – 0.079 in)

Nozzle pressure
0.3 – 0.4 MPa (approx. 3 - 4 bar; 44 - 58 p.s.i.)

Airless spray

Recommended thinner
THINNER 21-06

Volume of thinner
0 - 5%

Nozzle orifice
Approx. 0.53 – 0.79 mm (0.021 – 0.031 in)

Nozzle pressure
19.0 - 22.5 MPa (approx. 190 - 225 bar; 2756 - 3264 p.s.i.)

Brush/roller

• Only for touch-up and spot repair
• Due to thixotropy, it is difficult to obtain a smooth film by brush, although this does not affect performance

Cleaning solvent
THINNER 90-58

ADDITIONAL DATA

<table>
<thead>
<tr>
<th>Spreading rate and film thickness</th>
<th>Theoretical spreading rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFT</td>
<td></td>
</tr>
<tr>
<td>200 µm (8.0 mils)</td>
<td>4.4 m²/l (174 ft²/US gal)</td>
</tr>
<tr>
<td>750 µm (30.0 mils)</td>
<td>1.2 m²/l (47 ft²/US gal)</td>
</tr>
</tbody>
</table>
Overcoating interval for DFT up to 300 µm (12.0 mils)

<table>
<thead>
<tr>
<th>Overcoating with...</th>
<th>Interval</th>
<th>10°C (50°F)</th>
<th>20°C (68°F)</th>
<th>30°C (86°F)</th>
<th>40°C (104°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>various two-component epoxy coatings</td>
<td>Minimum</td>
<td>36 hours</td>
<td>16 hours</td>
<td>10 hours</td>
<td>8 hours</td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>3 months</td>
<td>3 months</td>
<td>3 months</td>
<td>1 month</td>
</tr>
<tr>
<td>polyurethanes</td>
<td>Minimum</td>
<td>36 hours</td>
<td>16 hours</td>
<td>10 hours</td>
<td>8 hours</td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>1 month</td>
<td>1 month</td>
<td>14 days</td>
<td>7 days</td>
</tr>
</tbody>
</table>

Notes:
- Surface should be dry and free from any contamination
- Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)

Curing time for DFT up to 300 µm (12.0 mils)

<table>
<thead>
<tr>
<th>Substrate temperature</th>
<th>Dry to touch</th>
<th>Dry to handle</th>
<th>Full cure</th>
</tr>
</thead>
<tbody>
<tr>
<td>10°C (50°F)</td>
<td>24 hours</td>
<td>48 hours</td>
<td>21 days</td>
</tr>
<tr>
<td>20°C (68°F)</td>
<td>6 hours</td>
<td>20 hours</td>
<td>8 days</td>
</tr>
<tr>
<td>30°C (86°F)</td>
<td>4 hours</td>
<td>12 hours</td>
<td>4 days</td>
</tr>
</tbody>
</table>

Note: Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)

Pot life (at application viscosity)

<table>
<thead>
<tr>
<th>Mixed product temperature</th>
<th>Pot life</th>
</tr>
</thead>
<tbody>
<tr>
<td>10°C (50°F)</td>
<td>3 hours</td>
</tr>
<tr>
<td>20°C (68°F)</td>
<td>2 hours</td>
</tr>
<tr>
<td>30°C (86°F)</td>
<td>1 hour</td>
</tr>
</tbody>
</table>

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
- SAFETY INDICATIONS
  INFORMATION SHEET 1430
- SAFETY IN CONFINED SPACES AND HEALTH SAFETY, EXPLOSION HAZARD – TOXIC HAZARD
  INFORMATION SHEET 1431
- SAFE WORKING IN CONFINED SPACES
  INFORMATION SHEET 1433
- DIRECTIVES FOR VENTILATION PRACTICE
  INFORMATION SHEET 1434
- CLEANING OF STEEL AND REMOVAL OF RUST
  INFORMATION SHEET 1490
- SPECIFICATION FOR MINERAL ABRASIVES
  INFORMATION SHEET 1491
- RELATIVE HUMIDITY – SUBSTRATE TEMPERATURE – AIR TEMPERATURE
  INFORMATION SHEET 1650

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