



Polyarmor® G18

General Description

A functionalized polyethylene copolymer based thermoplastic powder coating designed specifically for "Oil & Gas Pipeline" applications where maximum mechanical performance, impact resistance and UV-stability is required. Polyarmor® G18 is a good general purpose protective coating.

Surface Preparation

Chemical Pretreatment - Multi-stage phosphate conversion coating may be used

Mechanical Preparation - (SSPC-SP6) 2-3 mil (50-75µm) anchor profile using clean, sharp edged blast media

NOTE: Properly preparing parts before powder coating is essential for a quality finish. This includes cleaning, rinsing, drying and ensuring the substrate surface is free and clear of any contaminates.

Fluidized Bed

For fluidized-bed dipping, preheat parts to 400° F (205°C) adjusting for part thickness. Dip parts in fluidized-bed of POLYARMOR® G18 for 4-6 seconds. Carefully remove excess powder. For improved surface finish, if necessary, parts may be post-baked for a short period of time.

Electrostatic Deposition

Polyarmor® G18 can be applied via electrostatic deposition with or without pre-heat. When not using pre-heat, the powder should be applied to achieve a thickness of 8 – 10mils (203 - 254µm). Recommended voltage setting when using Corona equipment is 40 – 60 kv. Post-baking at 350 - 425°F (175 - 220°C) for 5 to 10 minutes depending on metal thickness, or until desired flow out is achieved. For pre-heated parts, the recommended preheat temperature is 400°F (205°C). Deposit Polyarmor® G18 8-12mils (203 – 300µm) or higher if desired. For improved surface finish, parts may be post-baked for a short period of time if necessary. Times and temperatures in the oven will depend on configuration and thickness of the part.

No Cure Time

Thermoplastic powder coatings need only be heated enough to flow out the coating, nothing more. Overheating may cause degradation or embrittlement of the coating. Coating may be put into service when cooled.

| Powder Properties | |
|----------------------------|--|
| Coverage (100% efficiency) | 24.7 ft ² per pound @ 8mils (5.04 m ² per kg @ 203µm) |
| Particle Size | Available in fluid bed and spray grades |
| VOC Content | ZERO |
| Thickness (Recommended) | 8 – 10mils (203 – 254µm) |
| Storage Stability | Store in dry area below 90°F (32°C), keep container closed with liners sealed and out of direct sunlight and any moisture or external contaminates. Always use good manufacturing practices. |

| Performance Properties | | |
|------------------------------------|-------------|---|
| Melting Point | | 203°F (95°C) |
| Specific Gravity | ASTM D 792 | 0.954g/cm ³ |
| Adhesion | ASTM D 4541 | >1,000psi (7MPa) |
| Hardness Shore D | ASTM D 2240 | 55 |
| Impact Resistance | ASTM B 2794 | >384 in-lbs (43 Joules) |
| Vicat Softening Point | ASTM D 1525 | 162°F (72°C) |
| Tensile Strength | ASTM D 638 | 3482psi (24MPa) |
| Elongation (%) | ASTM D 638 | 575% |
| Humidity Resistance | ASTM D 2247 | No blistering or loss of gloss after 1000 hours |
| Salt Spray | ASTM B 117 | 2,000 hrs. no significant change in color or gloss |
| QUV | ASTM G 53 | 2,000 hrs. no significant change in color or gloss |
| Taber Abrasion | ASTM D 4060 | 70-90mg loss, CS 17 wheel, 100mg loss, CS 17 wheel |
| Flexibility (Conical Mandrel Bend) | ASTM D 522 | 1/8in (3.2mm), no cracks (>32%) |
| Gloss | ASTM D 523 | 60 – 80 (Depending on color choice) |
| Melt Index | ASTM D 1238 | 20 |
| Dielectric Breakdown | ASTM D 149 | 893volts/mil (35.2KV/mm) obtained using 20 mils natural coating |

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