



# 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 <sup>2</sup> per pound @ 8mils (5.04 m <sup>2</sup> 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 <sup>3</sup>
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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