

PPG FULL METAL JACKET Plus (FMJ+) Polyurea

DESCRIPTION

Two-component, fast set, flexible polyurea spray-applied vehicle protection coating

PRINCIPAL CHARACTERISTICS

- Abrasion and impact resistant
- Fast set
- Fast return to service
- Remains flexible at lower temperatures
- Dry temperature resistance up to 250°F (121°C)
- Can be sprayed horizontally, vertically, or overhead at any thickness.
- Insensitive to atmospheric moisture during application
- TYPICAL USES:
- Pick-up truck spray-in bed liners
- Used where a seamless, flexible system is essential
- Automotive service areas
- Industrial and commercial interior
- Surfaces subject to vibration, expansion, contraction, movement, flexing, impact, or abrasion.
- Not recommended for direct contact with extremely high or low pH chemicals

COLOR AND GLOSS LEVEL

- Black, Tan, Light Gray, Red, Blue

Note: Color changes can occur under UV-exposure without negative impact on the product performance

BASIC DATA AT 72°F (22°C)

Data for mixed product	
Number of components	Two
Mass density	8.7 lb/US gal (1.0 kg/l)
Recommended dry film thickness	60.0 - 100.0 mils (1524 - 2540 µm) per coat
Theoretical spreading rate	100 ft ² /US gal for 16.0 mils (2.5 m ² /l for 400 µm)
Dry to touch	9 seconds
Overcoating Interval	Maximum: 12 hours

Notes:

- See ADDITIONAL DATA - Spreading rate and film thickness
- If overcoat time is exceeded, abrade and clean surface before recoating. Then treat with PPG RAVEN® 161 Surface Activator as a reactivating adhesion promoter.
- Complete polymerization to achieve final strength may take up to several days or weeks depending on application conditions.
- See ADDITIONAL DRYING/CURING DETAILS for gel time and tack-free time
- The shelf life for the unmixed components (Part A and Part B) for this product is 12 months at 70°F (21°C).
- Refer to Application Guide for additional information



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RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Truck bed surface

- Remove the majority of the clear coat, exposing the painted surface; material will bond to paint.
- Use the following (or equivalent): DA air sander with 60-80 grit paper; electric 4" grinder with 36 grit alum oxide pad; or 80 grit nylon filament cup brush
- At perimeter, near Fiber Line tape: hand sand to edge of filament line with 120-180 grit paper
- The surface to be coated must be properly prepared, dry, clean and free of contamination.
- Blow off all prepped surface with compressed air.

Steel (Atmospheric/Non-Immersion Service)

- Remove all surface contaminants, oil and grease in accordance with SSPC SP-1
- Abrasive blast with an angular abrasive to an SSPC SP-6 cleanliness or higher. Achieve a surface profile of 3.0 mils (76 µm) or higher
- Ensure surface is dust free after blasting

Non-ferrous metals

- Abrasive blast in accordance with SSPC SP-16 guidelines
- Abrasive blast with non-metallic abrasive

Wood

- Ensure the surface is clean, dry, and free of deleterious matter prior to the application
- The use of primers on porous surfaces is recommended to reduce the chance of pin holing

Substrate temperature and application conditions

- Ambient temperature during application and curing should be above 40°F (5°C).
- Substrate temperature during application and curing should be above 40°F (5°C)
- The substrate temperature must be at least 5°F (3°C) above dew point

Note: Do not install over damp, wet or saturated substrates

SYSTEM SPECIFICATION

- Recommended DFT for Prepared Truck Bed: 90 mils (2300 µm)
- Recommended DFT for Concrete: 80-100 mils (2030-2540 µm)
- Recommended DFT for Steel (Carbon): 60-80 mils (1525-2030 µm)
- Recommended DFT for High Abrasion Service: 60-80 mils (1525-2030 µm)

INSTRUCTIONS FOR USE

- Application requires use of a heated plural component pump with impingement gun.
- Pump must be specifically designed for fast-set polyurea application, and capable of maintaining the specified temperature and dynamic pressure during application.



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Mixing ratio by volume: Part A to Part B 50:50 (1:1)

- Prior to mixing, the temperature of Part A and Part B should be at least (70°F) 21°C
- Part B component must be thoroughly agitated prior to use
- Mix Part B using three-tier, collapsible blade power mixer through the center bung hole
- Mixer diameter should be 1/3 of the diameter of the container
- Mix for at least 30 minutes prior to processing
- Properly mixed material will be a uniform color without light or dark spots
- For recommended application instructions, see working procedure

Application

- Apply in a uniform manner to desired thickness
- Application thickness is determined by spray gun configuration and speed of application

Airless spray: Plural component

- Material requires heated plural component spray set-up with impingement gun
- Heated hoses are recommended
- Processing equipment should be capable of maintaining set temperatures and pressure at rest and during operation

Recommended thinner

No thinner should be added

Notes:

- Part A should be maintained at temperature of 160-170°F (71-77°C)
- Part B should be maintained at temperature of 160-170°F (71-77°C)
- Heated hose temperature: 160-170°F (71-77°C)
- Recommended dynamic pressure for spray equipment: >1,700 psi (>11.7 MPa)

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	Theoretical spreading rate
60.0 mils (1524 µm)	27 ft ² /US gal (0.7 m ² /l)
80.0 mils (2032 µm)	20 ft ² /US gal (0.5 m ² /l)
90.0 mils (2286 µm)	18 ft ² /US gal (0.4 m ² /l)
100.0 mils (2540 µm)	16 ft ² /US gal (0.4 m ² /l)



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Physical data of cured material	
Characteristic	Value
Tensile Strength (ASTM D638)	>3,100 psi (>21 MPa)
Tensile Elongation (ASTM D638)	>290%
100% Modulus (ASTM D412/D638)	1,250 psi (8.6 MPa) \pm 100%
300% Modulus (ASTM D412/D638)	2,300 psi (16 MPa) \pm 100%
Tear Strength (Die C, ASTM D624)	>290 pli
Hardness, Shore A (ASTM D2240)	97 \pm 5
Hardness, Shore D (ASTM D2240)	>47
Taber Abrasion (ASTM D4060, CS-17 Wheel, 1 kg load, 1,000 cycles)	8.6 mg loss
Taber Abrasion (ASTM D4060, H-18 wheel, 1 kg load, 1,000 cycles)	161 mg loss
Taber Abrasion (ASTM D4060, H-22 wheel, 1 kg load, 1,000 cycles)	136 mg loss

Note: The value ranges stated in this Technical Data Sheet are based on system processing under laboratory conditions. Equipment configurations and/or field application conditions may produce variances in final system values.

Additional drying/curing details	
Characteristic	Value
Gel time at 72°F (22°C)	6 seconds

Note: The value ranges stated in this Technical Data Sheet are based on system processing under laboratory conditions. Equipment configurations and/or field application conditions may produce variances in final system values.

DISCLAIMER

- For industrial or professional use only

SAFETY PRECAUTIONS

- Read all label and Safety Data Sheet (SDS) information prior to use

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.



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REFERENCES

• SAFETY INDICATIONS	INFORMATION SHEET	1430
• Product Test Result Summary Sheet		
• DIRECTIVES FOR VENTILATION PRACTICE	INFORMATION SHEET	1434
• CONVERSION TABLES	INFORMATION SHEET	1410
• EXPLANATION TO PRODUCT DATA SHEETS	INFORMATION SHEET	1411

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