

# PPG FULL METAL JACKET (FMJ) Hybrid Polyurea

Formerly known as

## DESCRIPTION

Two-component, fast set, rapid curing, flexible, hybrid polyurea spray coating

## PRINCIPAL CHARACTERISTICS

- Fast set
- Fast return to service
- Excellent adhesion to steel
- Tough, flexible, and impact resistant
- Remains flexible at lower temperatures
- Dry temperature resistance from -40°F (-40°C) to 250°F (210°C)
- Extremely tough monolithic membrane is created at a minimum thickness of 20 mils (25 µm)
- Insensitive to atmospheric moisture during application
- TYPICAL USES:
- Used where a seamless, flexible system is essential
- Pick-up truck spray-in bed liners
- Automotive service areas
- Industrial and commercial interior
- 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	16 ft <sup>2</sup> /US gal for 100.0 mils (0.4 m <sup>2</sup> /l for 2540 µm)
Dry to touch	4 seconds
Overcoating Interval	Maximum: 3 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 must be properly prepared, dry, clean and free of any 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

- The surface must be properly prepared, dry, clean and free of any contamination
- The use of primers on porous surfaces is recommended to reduce the chance of pin holing

### Substrate temperature and application conditions

- Substrate temperature during application and curing should be above -20°F (-29°C)
- The substrate temperature must be at least 5°F (3°C) above dew point
- Concrete and masonry substrate moisture shall be less than 5%

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

## SYSTEM SPECIFICATION

- Primers for Carbon Steel: PPG AQUATAPOXY® 190 Primer, PPG PW-1 Primer
- Primers for non-ferrous metals: PPG PW-1 Primer
- Primers for wood/fiberglass: PPG VF20 Primer
- Tie-Coat: PPG RAVEN® 161 Primer
- Recommended DFT for Concrete: 80-100 mils (2.0-2.5 mm)
- Recommended DFT for Steel (Carbon): 60-80 mils (1.5-2.0 mm)
- Recommended DFT for High Abrasion Service: 60-80 mils (1.5-2.0 mm)



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## 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.

### **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)
- Mixer diameter should be 1/3 of the diameter of the container
- 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
- 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
- Material supply capacity should be 4 times the material output of the selected spray gun configuration
- 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°F (71°C)
- Part B should be maintained at temperature of 160°F (71°C)
- Heated hose temperature: 160°F (71°C)
- Recommended dynamic pressure for spray equipment: 2,000 - 2,500 psi (13.8 - 17.2 MPa)

## ADDITIONAL DATA

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



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Physical data of cured material	
Characteristic	Value
Tensile Strength (ASTM D638)	2,004 psi (14 MPa)
Tensile Elongation (ASTM D638)	226%
100% Modulus (ASTM D638)	1,100 psi (7.6 MPa)
200% Modulus (ASTM D638)	1,650 psi (11 MPa)
Tear Strength (Die C, ASTM D624)	297 pli
Hardness, Shore A (ASTM D2240)	97
Hardness, Shore D (ASTM D2240)	53
Taber Abrasion (ASTM D4060, CS-17 Wheel, 1 kg load, 1,000 cycles)	100.8 mg loss
Taber Abrasion (ASTM D4060, H-18 wheel, 1 kg load, 1,000 cycles)	40.2 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)	2-3 seconds
Tack free time at 72°F (22°C)	3-4 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 professional use only. Not for household use

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

## WARRANTY

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