PPG VERSAFLEX® 250 UV Polyurea

formerly sold as FULL METAL JACKET™ PLUS

DESCRIPTION

Two-component, fast set, rapid curing, flexible, 100% pure polyurea thermoset elastomer spray 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 77°F (25°C)

Data for mixed product	
Number of components	Two
Mass density	8.8 lb/US gal (1.1 kg/l)
Volume solids	100 ± 2%
VOC (Supplied)	EPA Method 24: 0.0 lb/US gal (0.0 g/l)
Recommended dry film thickness	60.0 - 100.0 mils (1524 - 2540 µm) per coat
Theoretical spreading rate	27 ft^2/US gal for 60.0 mils (0.7 m^2/l for 1524 µm) 16 ft^2/US gal for 100.0 mils (0.4 m^2/l for 2540 µm)
Dry to touch	9 seconds
Overcoating Interval	Minimum: Coating should no longer leave residue when touched with a gloved finger Maximum: 12 Hours
Shelf life	Part A: at least 12 months when stored cool and dry Part B: at least 12 months when stored cool and dry

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Notes:

- See ADDITIONAL DATA – Spreading rate and film thickness
- If overcoat time is exceeded, abrade and clean surface before recoating. Then treat with PPG VERSAFLEX® 960, or a solvent such as MEK, to promote adhesion.
- Complete polymerization to achieve final strength may take up to several days or weeks depending on application conditions.
- See ADDITIONAL DATA - Drying/Curing details for gel time and tack-free time
- Material should be stored in dry conditions, out of direct sunlight, and in unopened original factory containers, at temperatures above 60°F (16°C) and below 90°F (32°C)

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- 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
- Do not install over damp, wet, or saturated substrates

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

Concrete / Masonry

- Prepare in accordance with SSPC-SP13 guidelines to achieve a surface profile equivalent to CSP 3 to CSP 5 in accordance with ICRI 310.2R-2013
- Maximum moisture content of 3 lb / 1,000 ft^2/24 hours per ASTM F1869
- Moisture content should not exceed 5%

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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

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SYSTEM SPECIFICATION

Recommended DFTs

- 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)

Note:

- Recommended DFTs are general guidelines only. Product thickness is highly dependent on service conditions. Contact your PPG sales representative to determine appropriate product thickness for your specific application.

Service Temperatures

- -60°F (-51.1°C) to 250°F (121.1°C)

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: 1:1 (Part A to Part B)

- Prior to mixing, the temperature of Part A and Part B should each 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

Note:

- This product is a part of the VERSAFLEX° 250 Series. All products in this series utilize the same Part A component, which is labeled as "VERSAFLEX® 250 A".

Application

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

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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

Notes:

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

ADDITIONAL DATA

Viscosity at 77°F (25°C)

- Part A: 450 +/- 50 cPs
- Part B: 350 +/- 25 cPs

Physical data of cured material	
Characteristic	**Value**
Tensile Strength (ASTM D412/D638)	4,250 psi (29.3 MPa)
Tensile Elongation (ASTM D412/D638)	>350%
Hardness, Shore A (ASTM D2240)	97
Hardness, Shore D (ASTM D2240)	47
100% Modulus (ASTM D412)	1,250 psi (8.6 MPa)
300% Modulus (ASTM D412)	2,300 psi (15.8 MPa)
Tear Strength (Die C, ASTM D624)	420 pli (73.6 KN/m)
Taber Abrasion (ASTM D4060, CS-17 Wheel, 1 kg load, 1,000 cycles)	8.6 mg
Taber Abrasion (ASTM D4060, H-18 wheel, 1 kg load, 1,000 cycles)	161 mg
Taber Abrasion (ASTM D4060, H-22 wheel, 1 kg load, 1,000 cycles)	136 mg

Note:

- The value ranges stated in this Product Data Sheet are based on system processing under laboratory conditions. These are typical values and should not be considered product specifications for a specific field application. Equipment configurations and/or field application conditions may produce variances in final system values.

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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)

Additional drying/curing details		
Substrate temperature	**Gel time**	**Tack free time**
77°F (25°C)	6 seconds	9 seconds

DISCLAIMER

- For industrial or professional use only
- This product is specifically suitable for use on the substrates mentioned in this document. For application on any other substrates, please always contact your PPG representative for specific instructions and in order to make sure that the product performance can be safeguarded.

SAFETY PRECAUTIONS

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

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective & 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

- Information sheet | Explanation of product data sheets

WARRANTY

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product. THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

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LIMITATIONS OF LIABILITY

AVAILABILITY OF PACKAGING

Packaging

- 10-gallon kits
- 110-gallon kits (two 55-gallon drums filled by weight, volume is closely approximated)