

PPG VERSAFLEX® 225 Polyurea

previously sold as K5 abrasion-resistant polyurea

DESCRIPTION

Two-component, fast set, abrasive-resistant polyurea elastomer spray coating

PRINCIPAL CHARACTERISTICS

- Fast return to service
- Tough, flexible and abrasion resistant
- Impact absorbing properties
- Sound dampening and noise control properties
- Low temperature flexibility
- Can be applied horizontally, vertically and overhead
- Used where a seamless, flexible system is essential
- TYPICAL USES:
- Industrial and commercial warehouses
- Water & wastewater structures
- Aquatic animal and water ride basins
- Mining facilities
- High abrasion locations

COLOR AND GLOSS LEVEL

- Black, Tan, Dark Gray and Light Gray
- Part A can vary in color from Clear to Amber
- Semi-gloss

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	8.9 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 - 125 mils (1524 to 3175 µm)
Theoretical spreading rate	27 ft ² /US gal for 60.0 mils (0.7 m ² /l for 1524 µm) 12.8 ft ² /US gal for 125.0 mils (0.3 m ² /l for 3175 µm)
Dry to touch	22 seconds
Overcoating Interval	Minimum: 2 minutes Maximum: 12 hours
Curing time	24 hours



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Data for mixed product	
Shelf life	Part A: at least 6 months when stored cool and dry Part B: at least 6 months when stored cool and dry

Notes:

- 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.
- Warmer temperatures will reduce the overcoating time. Contact your PPG Technical Representative for assistance.
- 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 80°F (27°C).
- See ADDITIONAL DATA - Additional drying/curing details

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Not recommended for direct contact with extremely high or low pH chemicals

Concrete / Masonry

- All surfaces must be sound, clean, free of oil, grease, dirt, mildew, curing compounds, loose and flaking paint, and other foreign substances
- Abrade surface to achieve a surface profile equivalent to CSP 3 to CSP 5 in accordance with ICRI 310.2R-2013
- Prepare in accordance with SSPC SP-13 guidelines
- Maximum moisture content of 3 lb / 1,000 ft²/24 hours per ASTM F1869
- Moisture content should not exceed 5%

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

Non-ferrous metals

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

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)
- Substrate temperature should be at least 5°F (3°C) above dew point and rising before application of coating materials.

Note:



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

Recommended DFTs

- 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: 100-125 mils (2540-3175 µm)

Notes:

- 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.
 - Please contact your PPG representative if using an alternate primer
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Primer

- Primers for concrete/masonry: PPG RAVEN® 175 Primer or PPG VERSAFLEX® 920 Primer
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Service Temperatures

- -40°F to 200°F (-40°C to 93°C)
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INSTRUCTIONS FOR USE

- Installation requires heated plural component set-up with direct impingement application equipment that is capable of maintaining 2,500 psi (17 MPa) dynamic spray pressure
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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)
 - Pre-mix Part B component for at least 30 minutes. When properly pre-mixed, material will have a uniform color with no dark or light spots
 - Mix Part B using three-tier, collapsible blade power mixer through the center bung hole
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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 required
- 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 B should be maintained at temperature of 160-170°F (71-77°C)
- Heated hose temperature: 160-170°F (71-77°C)
- Part A should be maintained at temperature of 160-170°F (71-77°C)

ADDITIONAL DATA

Viscosity at 77°F (25°C)

- Part A: 1,400 +/- 100 cPs
- Part B: 200 +/- 50 cPs

Physical data of cured material	
Characteristic	Value
Tensile Strength (ASTM D638)	4,100 psi (28.3 MPa)
Tensile Elongation (ASTM D638)	287%
Hardness, Shore A (ASTM D2240)	96 +/- 5
Hardness, Shore D (ASTM D2240)	57 +/-5
100% Modulus (ASTM D412)	1,800 psi (12 MPa)
200% Modulus (ASTM D412/D638)	3,000 psi (21 MPa)
300% Modulus (ASTM D412)	4,700 psi (32 MPa)
Tear Strength (Die C, ASTM D624)	690 pli
Taber Abrasion (ASTM D4060, H-18 wheel, 1 kg load, 1,000 cycles)	33 mg loss
Taber Abrasion (ASTM D4060, CS-17 Wheel, 1 kg load, 1,000 cycles)	0.2 mg loss

Note:



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- The value ranges stated in this Product 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		
Substrate temperature	Gel time at 72°F (22°C)	Tack free time
72°F (22°C)	9 seconds	22 seconds

Product Qualifications

- Compliant with USDA Incidental Food Contact Requirements

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 distributor or PPG representative for specific instructions and in order to make sure that the product performance can be maintained.

SAFETY PRECAUTIONS

- Contains isocyanate. All safety precautions must be followed including proper skin protection and breathing protection
- 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.

WARRANTY

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