

PPG VERSAFLEX® 220

formerly sold as VersaFlex VF330 Pure Polyurea

DESCRIPTION

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

PRINCIPAL CHARACTERISTICS

- Fast return to service
- Excellent abrasion resistance
- Tough, resilient, elastomeric membrane
- Good corrosion prevention properties
- Excellent adhesion to steel
- Aromatic based polyurea
- Can be applied horizontally, vertically and overhead
- Dry exposure range of -20°-250°F (-29°-121°C)
- TYPICAL USES:
- Industrial and commercial warehouses
- Water & wastewater structures
- Mining facilities

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 72°F (22°C)

Data for mixed product	
Number of components	Two
Volume solids	100 ± 2%
VOC (Supplied)	EPA Method 24: 0.0 lb/US gal (0.0 g/l)
Dry to touch	15 seconds
Dry to walk on	1 hour
Overcoating Interval	Minimum: Coating should no longer leave residue when touched with a gloved finger Maximum: 24 hours
Full cure after	14 days

Notes:

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- See ADDITIONAL DATA – Spreading rate and film thickness
- May be top-coated with non-solvent based coatings after curing for 30 minutes
- If overcoat time is exceeded, ensure that surface is clean, dry and free from all deleterious material. Then treat with PPG VERSAFLEX® 960 Primer as a reactivating adhesion promoter
- See ADDITIONAL DATA - Additional drying/curing details
- The shelf life for each of the unmixed components (Part A and Part B) for this product is 12 months at 70°F (21°C)
- Warmer temperatures will reduce the overcoating window. 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).

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

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

Substrate temperature and application conditions

- Substrate temperature during application should be greater than -20°F (10°C)
- Substrate temperature during application and curing should be at least 5°F (3°C) above dew point

Note:

- Do not install over damp, wet or saturated substrates

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
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SYSTEM SPECIFICATION

- Primers for concrete/masonry: PPG RAVEN® 175 Primer, PPG RAVEN® 171FS Primer, PPG VERSAFLEX® 915 Primer, or PPG VERSAFLEX® 920 Primer
- Primers for Carbon Steel: PPG AQUATAPOXY® 190 Primer, PPG VERSAFLEX® 901 Primer
- Primer for non-ferrous metals: PPG VERSAFLEX® 901 Primer
- Primers for wood/fiberglass: PPG VERSAFLEX® 920 Primer, PPG VERSAFLEX® 915 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: 100-125 mils (2540-3175 µm)

INSTRUCTIONS FOR USE

- Installation requires heated plural component set-up with direct impingement application equipment that is capable of maintaining 2,000 psi (14 MPa) dynamic spray pressure

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
- Mixer diameter should be 1/3 of the diameter of the container
- Mix Part A and Part B together for at least 30 minutes using a three-tier, collapsible blade power mixer
- Properly mixed material will be a uniform color without light or dark spots

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°F (71°C)
- Part A should be maintained at temperature of 160°F (71°C)
- Heated hose temperature: 160°F (71°C)

ADDITIONAL DATA

Physical data of cured material

Characteristic	Value
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Physical data of cured material	
Adhesion to Concrete (ASTM D7234)	>200 psi (>1.4 MPa)
Tear Strength (Die C, ASTM D624)	>300 pli
Tensile Strength (ASTM D638)	>2,500 psi (>17 MPa)
Tensile Elongation (ASTM D638)	450%
100% Modulus (ASTM D638)	960 psi (6.6 MPa)
300% Modulus (ASTM D638)	1,450 psi (10 MPa)
Hardness, Shore D (ASTM D2240)	>50
Taber Abrasion (ASTM D4060, H-18 wheel, 1 kg load, 1,000 cycles)	<100 mg loss
Adhesion to Steel (ASTM D4541)	>500 psi (>3.5 MPa)

Notes:

- 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.
- Concrete bond strength is highly dependent on the age and condition of the concrete substrate. Actual field conditions of concrete substrate may result in lower values. Refer to contract document requirements and/or PPG's published documentation for additional information.

Additional drying/curing details	
Substrate temperature	Gel time at 72°F (22°C)
72°F (22°C)	<10 seconds

Product Qualifications

- Compliant with USDA Incidental Food Contact Requirements

DISCLAIMER

- PPG Protective & Marine Coatings does not accept any responsibility or liability for any odor, taste or contamination imparted to the drinking water from the coatings or products retained in the coating

SAFETY PRECAUTIONS

- Read all label and Safety Data Sheet (SDS) information prior to use
- Contains isocyanate. All safety precautions must be followed including proper skin protection and breathing protection

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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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