PPG VERSAFLEX™ 291

Formerly known as Polyshield HIE (-PC)

DESCRIPTION

Two-component, fast set, high-performance, pure polyurea elastomer spray coating

PRINCIPAL CHARACTERISTICS

- 100% solids
- Fast set
- Good adhesion to steel
- Excellent impregnating properties (penetration and saturation of the concrete)
- Dry temperature resistance up to 250°F (121°C)
- Good abrasion resistance
- Flame spread ASTM E84 Class A
- TYPICAL USES:
- Encapsulation material for EPS or other types of flotation materials
- Encapsulation material for asbestos, lead paint or other dry hazardous materials
- Excellent anticorrosive properties and water resistance
- Liner for concrete tanks, ponds, lagoons, reservoirs, dikes, tunnels, barges etc.
- Maintenance and repair for failed sheet membrane liners
- Pipelines and tanks

COLOR AND GLOSS LEVEL

- Black
- Light gray

Note:

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

BASIC DATA AT 70°F (21°C)

Data for mixed product	
Number of components	Two
Mass density	8.8 lb/US gal (1.1 kg/l)
Volume solids	100%
VOC (Supplied)	EPA Method 24: 0.0 lb/US gal (0.0 g/l)
Recommended dry film thickness	60 - 100 mils (1524 to 2540 µm)
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 (16.0 m^2/l for 2540 µm)
Dry to touch	80 seconds
Overcoating Interval	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:

- Complete polymerization to achieve final strength can take up to several days or weeks, depending on a variety of conditions or product type
- 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)
- See ADDITIONAL DATA – Curing time

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Ambient temperature during application and curing should be above 40°F (5°C) and rising
- Substrate temperature during application should be at least 5°F (3°C) above dew point
- Surface must be clean, dry, and sound

Concrete

- 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

Steel (non-immersion service)

- Remove all rust, dirt, moisture, grease or other contaminants from the surface in accordance with SSPC SP-1
- Abrasive blast with an angular abrasive to an SSPC SP-10 cleanliness or higher. Achieve a surface profile of 3.0 – 4.0 mils (75 – 100 µm)
- Ensure surface is dust free after blasting

Geotextile fabric

- Only apply to the 'ironed' side of the geotextile
- Non-woven or spun-woven geotextiles are recommended

SYSTEM SPECIFICATION

- Primer may be required subject to substrate condition

Note:

- Contact PPG Tech Services for primer recommendations

Recommended DFTs

- Recommended DFT for Concrete: 80-100 mils (2.0-2.5 mm)
- Recommended DFT for Geotextile fabrics: 60-80 mils (1.5-2.0 mm)
- Recommended DFT for Steel (Carbon): 80-100 mils (2.0-2.5 mm)

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Service Temperatures

- -60°F to 200°F (-51°C to 93°C)

Permeability

- At 30 mils (762 µm) polyurea systems typically acheive an MVT rate in the range of 0.020 - 0.025 perms.

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 1:1

- 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

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Application

- For plural spray application only
- Product should be applied in multi-directional (north-south, east-west) motion to ensure proper coating thickness

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Airless spray – Plural component

- 1:1 Plural component pump
- 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
- Heated hose temperature: 160-170°F (71-77°C)
- Liquid temperature in drums during application should be kept between 70°F (21°C) and 100°F (38°C)
- Pre-heater temperature should be maintained at 160-170°F (71-77°C)

Recommended thinner

Do not thin

Nozzle pressure

2000 - 2500 p.s.i. (approx. 138 - 173 bar; 13.8 - 17.2 MPa)

Note:

- Contact your PPG technical services representative for equipment and set-up recommendations

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ADDITIONAL DATA

Viscosity at 77°F (25°C)

- A-Side: 700 +/- 25 cP
- B-Side: 325 +/- 25 cP

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Physical data of cured material	
Characteristic	**Value**
Tensile Strength (ASTM D638)	3200 psi (22 mpa)
Tensile Elongation (ASTM D638)	550%
Hardness, Shore A (ASTM D2240)	95 ±5
Hardness, Shore D (ASTM D2240)	50 ± 5
Tear Strength (Die C, ASTM D624)	494 PLI (86.5 N/mm)
Dry Temperature Resistance, continuous	250°F (121°C)
Dry Temperature Resistance, intermittent	300°F (148°C)

Note:

- 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.

Curing Time			
Substrate temperature	**Gel time**	**Tack free time**	**Dry to walk on**
70°F (21°C)	6 seconds	80 seconds	24 hours

Note:

- Dry times can vary based on environmental and substrate conditions

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.

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AVAILABILITY OF PACKAGING

Packaging

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