

POLYUREA SPRAY ELASTOMER SYSTEM

Description

VFI-205 is a 100% solids, spray applied, aromatic pure polyurea elastomeric polymer. It is characterized by high elongation, low modulus, good chemical and solvent resistance, and usability under wide climatic conditions with outstanding durability. It is composed of isocyanate prepolymers, which are reacted with amine prepolymers, to form a polyurea elastomer. Both components are low viscosity fluids, which react very quickly to form a tough polymer when mixed and applied using heated, plural component airless spray equipment.

Usage

VFI-205 is primarily used as a wear and waterproofing membrane over concrete and geotextiles. Also used as a protective coating on steel structures or tanks for corrosion control. Can be used as a tank liner if, pre-approved by VFI's technical department. Please contact your VFI representative for application specifications.

Color

Standard color is black. Custom colors are available but lighter colors may change with UV exposure.

Physical Properties

Hardness

Shore A	89 - 91
Shore D	39 - 43

Tensile Properties

Strength	2643 psi
Elongation	645% min
Elastic Modulus	2795 psi
Yield Strength	367 psi
Permanent Set	30% max

Tear Strength

308 pli

Solid Material Density

64.80 lb/ft³

Abrasion Resistance

Taber Abraser, 1 Kg load, 1000 cycles CS-17 wheel. 2 mg loss

Cold Temperature Flexibility

Mandrel Bend Test
Passed 0.25 inch mandrel bend test @ 8° F

Adhesion

Prepared and primed concrete >725 lbs/in² with concrete failure

Weather & Environmental Performance

Service Temperature

-40°F to 180°F

Weatherability QUV Test Data

ASTM G-53
No cracking, checking or loss of integrity after 2000 hours. Light colors yellow when exposed to UV light.

Chemical Resistance

Contact your VFI representative with chemical information for verification of compatibility.

Hydrolytic Properties

Water absorption

24 hours at room temp 01.5%

Water Vapor Permeability

0% R.H. @ 73°F 35 mil film 1.65 perms

Fire Resistance

Not rated

Liquid Component Properties

Ratio

Volume 1 to 1

Coverage

1600 mil square feet per gallon

Solids

Weight: 100%
Volume: 100%

- **Viscosity**
Poly Component: 888 cps @ 77°F
Iso Component: 396 cps @ 77°F
- **Liquid Material Density & Specific Gravity**
Poly Component: (black) 8.35 lbs/gal
Depending upon color (SG 1.002g/ml)
Iso Component: 8.93 lbs/gal
(SG 1.072 g/ml)
- **VOC's**
Contains no Volatile Organic Compounds
- **Toxicity**
Iso component contains polymeric Isocyanate requiring fresh air respirator, gloves, eye

protection and protective clothing during application.

- **Storage Stability or Shelf Life**
Poly side 12 months in unopened containers @ 50° - 90°F
ISO side 6 months in unopened containers @ 50° - 90°F
- **Reactivity**
 - **Gel Time:** 3-5 seconds
 - **Tack Free:** 20-30 seconds
 - **Recoat Time:** Up to 4 hours
 - **Cure Time:** 48 – 72 hours
 - **Place Into Service:** 8 hours for light duty use, 48 hours for full service

Application

- **Equipment**
VFI-205 requires hot airless plural component equipment capable of producing a minimum spray pressure of 2000 psi and heat to 140°F to 160°F. Higher pressures to 2500 psi may provide better mixing with optimal physical properties for the end product. Contact your VFI representative for specific spray gun recommendations.
- **Material Preparation**
The product must be over 70° F for proper mixing and application.
- **Mixing**
Proper mixing equipment must be used to mix the Poly (B) side. Mix for 15 minutes @77°F before using. Please contact your VFI representative for specific mixer recommendations.
- **Primers**
Sealing porous surfaces with VFI-1007 is recommended. VFI #11 Epoxy Primer is recommended for cementitious and masonry surfaces where enhanced adhesion is needed. VFI-1003 Primer is recommended for maximum adhesion to blasted steel surfaces. Please contact your VFI representative for more specific preparation recommendations.
- **Substrate Preparation**
All surfaces must be free of contaminants and be able to provide mechanical adhesion on a solid substrate. Steel should be white blasted per SSPC-SP10/NACE 2-3 mil. Sandblast or shotblast all concrete surfaces to achieve a profile equal to 80-100 grit sand paper. Refer to SP13/NACE 6.
- **Clean-up Solvent**
Xylene, MEK. For reduced fire hazard use glycol ethers or environmentally acceptable chlorinated solvents.
- **Limitations**
Please contact VFI representative for further technical information for your specific application.
- **Precautions**
See Material Safety Data Sheet for complete safety data. Protect from exposure to moisture. Water will cause the "A" component (ISO) to generate carbon dioxide with resulting high pressure in closed containers.
- **Thinning**
Not Recommended
- **Packaging**
5 gallon pails
15 gallon ponies
55 gallon drums
270 gallon totes

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