

## POLYUREA SPRAY ELASTOMER SYSTEM

### Description

VFI-200 is a high performance, 100% solids, spray applied, aromatic pure polyurea elasto-plastic polymer. It is characterized by optimal physical properties, outstanding chemical and solvent resistance, and usability under wide climatic conditions with outstanding durability. It is composed of isocyanate pre-polymers, which are reacted with amine pre-polymers to form a pure polyurea elasto-plastic polymer. 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-200 is primarily used for high abrasion and chemical resistant lining applications. Please contact Volatile Free, Inc. for application specifications:

### Color

Standard color is black. This is an Aromatic product. Custom colors are available but may change with UV exposure.

## Physical Properties

### Hardness

ASTM D-2240  
Shore A 94 ± 2  
Shore D 50 ± 2

### Tensile Properties

ASTM D-412  
Strength 2523 psi  
Elongation 349%  
Elastic Modulus 8244 psi  
Yield Strength 1030 psi  
Permanent Set 35% max

### Tear Strength

ASTM D-624 Die C 425 ± 20 pli

### Solid Material Density

66 pcf

### Cold Temperature Flexibility

ASTM D-2240  
Pass 0.25 inch Mandrel Bend Test at -40°F.

### Adhesion

ASTM D-4541  
Prepared & primed concrete >725 lbs/in<sup>2</sup> 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. This is an Aromatic product. Light colors yellow when exposed to UV light.

### Hydrolytic Properties

▪ **Water absorption**  
ASTM D-471 1.5%

### Water Vapor Permeability

0% R.H. @ 73°F 45 mil film: 0.69 perms

### Chemical Resistance

Contact VFI for with specific chemicals for verification.

### Fire Resistance

Not rated

## Liquid Component Properties

### Ratio

Volume 1 to 1

### Coverage

1600 mil feet per gallon.

### Solids

Weight: 100%  
Volume: 100%

- **Viscosity**  
Poly Component: 500 ± 200 cps @ 77°F  
Iso Component: 500 ± 200cps @ 77°F
- **Liquid Material Density & Specific Gravity**  
Poly Component (black) 8.41 lbs/gal  
(SG 1.010 g/ml)  
Depending upon color.  
Iso Component 9.19 lbs/gal  
(SG 1.103 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:** Gel in 5-8 seconds.
  - **Tack Free:** Cure to handle in 30-40 seconds.
  - **Recoat Time:** Recoatable for up to 8 hours.
  - **Place-Into-Service Time:** Can be placed into light duty service in 8 hours. Chemical contact in 24 hours.
  - **Cure Time:** Develops full chemical resistance and physical properties in 48 hours.

## Application

- **Equipment**  
VFI-200 requires hot airless plural component equipment capable of maintaining a minimum of 2000 psi and heat to 160°F. Higher pressures to 2500 psi may provide better mixing with enhanced physical properties for the end product. Contact Volatile Free, Inc. 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 20 minutes before using. Please contact VFI's technical department for specific mixer 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
- **Primers**  
Sealing porous surfaces with VFI-1007 is recommended. VFI-#11 Epoxy Primer is also recommended for cementitious and masonry surfaces where enhanced adhesion is needed. VFI-1003 Primer is recommended for maximum adhesion to white blasted steel surfaces. Please contact Volatile Free, Inc. for more specific preparation recommendations.
- **Clean-up Solvent**  
Xylene, M.E.K. For reduced fire hazard use glycol ethers or environmentally acceptable chlorinated solvents.
- **Limitations**  
Contact VFI's Technical Department for appropriateness of this product 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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