VFI-205 POLYUREA SPRAY ELASTOMER SYSTEM

Overview

- **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 prepolymer, which are reacted with amine prepolymer, 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

- **Electrical Volume Resistivity**
  - ASTM D257-07 (Ohm-cm): $5.54 \times 10^{11}$

- **Electrical Surface Resistivity**
  - ASTM D257-07 (Ohm/mm²): $1.53 \times 10^{14}$

- **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 temperature: 01.5%
  - **Water Vapor Permeability**
    - 0% R.H. @ 73°F 35 mil film: 1.65 perms

- **Fire Resistance**
  - Not rated
## Liquid Component Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio</td>
<td>Volume: 1 to 1</td>
</tr>
<tr>
<td>Coverage</td>
<td>mil/sq/ft/gal: 1600</td>
</tr>
<tr>
<td>Solids</td>
<td>Weight: 100%</td>
</tr>
<tr>
<td></td>
<td>Volume: 100%</td>
</tr>
<tr>
<td>Viscosity</td>
<td>“A” side: 396 cps @ 77°F</td>
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<tr>
<td></td>
<td>“B” side: 888 cps @ 77°F</td>
</tr>
<tr>
<td>Liquid Material Density &amp; Specific Gravity</td>
<td>“A” side: 8.93 lbs/gal (SG 1.072 g/ml)</td>
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<tr>
<td></td>
<td>Depending upon color</td>
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<tr>
<td></td>
<td>“B” side: (black) 8.35 lbs/gal (SG 1.002g/ml)</td>
</tr>
<tr>
<td>VOC’s</td>
<td>Contains no Volatile Organic Compounds</td>
</tr>
</tbody>
</table>

## Toxicity
ISO component contains polymeric Isocyanate requiring fresh air respirator, gloves, eye protection and protective clothing during application.

## Storage Stability or Shelf Life
- “A” side 6 months in unopened containers @ 50-90°F.
- “B” side 12 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 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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For more information, contact us today at 800-307-9218

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