

## U.L. RATED POLYUREA HYBRID ROOFING ELASTOMER

### Description

VFI-540US Aluminum is a one-to-one by volume, fire retardant polyurea hybrid coating. For specific ratings and approvals contact Volatile Free, Inc.

### Usage

VFI-540US is intended for use as a spray applied, fire retardant coating for noncombustible surfaces. Can also be applied on a variety of applications including but not limited to the following:

- Protective coating for waterproofing metal and built-up roofs.

- Protective coating for urethane and expanded polystyrene insulation.
- Secondary containment when applied over concrete, wood or geotextiles.
- Protective coating for corrosion resistance on steel.

### Color

Aluminum, copper or gray.

## Physical Properties

### Weatherability

ASTM G-53 Weatherometer exposure equivalent to 15 years with no visible deterioration or change in physical properties.

### Fire Resistance

ASTM E-108 UL 790 /Class A over non-combustible substrates.

### Chemical Resistance

Good hydrolytic stability to 180°F. Good resistance to inorganic bases, acids and hydrocarbon solvents. Fair resistance to oxygenated and chlorinated solvents.

### Adhesion

ASTM D-4541

Strength: 600 lb./in.<sup>2</sup> with adhesive failure.

### Tensile

ASTM D-412 Strength: 1616 psi  
Elongation: 325-350%  
Permanent Set: 10% max.

### Hardness

ASTM D-2240 Shore A 85 ± 3

### Tear Resistance

ASTM D-624  
Strength 150 pli

### Abrasion Resistance

Excellent.

### Water Absorption

ASTM G-471 1.0% max.

## Liquid Component Properties

### Solids

|                  |         |      |
|------------------|---------|------|
| Aluminum:        | Weight: | 97%  |
|                  | Volume: | 96%  |
| Copper and Gray: | Weight: | 100% |
|                  | Volume: | 100% |

### Viscosity

|                          |                      |
|--------------------------|----------------------|
| Aluminum Poly Component: | 500 ± 200 cps @ 77°F |
| Aluminum Iso Component:  | 600 ± 200 cps @ 77°F |
| Copper Poly Component:   | 500 ± 200 cps @ 77°F |
| Copper Iso Component:    | 600 ± 200 cps @ 77°F |
| Gray Poly Component:     | 600 ± 200 cps @ 77°F |
| Gray Iso Component:      | 700 ± 200 cps @ 77°F |

### Density

Aluminum Poly Component:  
8.4 ± 0.1 lbs./gal. (S.G. 1.01)  
Aluminum Iso Component:  
10.5 ± 0.2 lbs./gal. (S.G. 1.26)

Copper Poly Component:  
8.4 ± 0.1 lbs./gal. (S.G. 1.01)  
Copper Iso Component:  
10.8 ± 0.2 lbs./gal. (S.G. 1.296)  
Gray Poly Component:  
9.1 ± 0.1 lbs./gal. (S.G. 1.09)  
Gray Iso Component:  
10.0 ± 0.2 lbs./gal. (S.G. 1.20)

### Flash Point

ASTM D-56 (TCC)  
Greater than 200°F

### Toxicity

Iso component contains polymeric isocyanate requiring fresh air supply respirator, gloves, and protective clothing during application.

### Storage Stability

One year in unopened containers at 50° - 90°F. Do not preheat over 100°F maximum without mixing. **Do not** store in direct sunlight.

## Application

### ■ Warning

VFI-540US Aluminum is sensitive to moisture. All containers must be sealed when not in use. Containers that have been opened should be used within one week. To prolong the shelf life of opened containers, it is recommended that a blanket of nitrogen be applied to the container or desiccant cartridge inserted into the container opening.

### ■ Storage When High Humidity is Present

Upon opening of the "A" Side, one of the two following procedures must be followed:

### ■ Desiccant Cartridge

Upon opening of the "A" Side for use, a desiccant cartridge should be inserted into one of the bung openings and the transfer pump tightly sealed in the other. To store unused portion of material, remove transfer pump and reseal drum plug. Leave desiccant cartridge in the drum during storage. When contents of the drum have been used, the desiccant cartridge can be used on another drum. You can continue to transfer the cartridge from drum to drum until the color indicates replacement.

### ■ Nitrogen Blanket

Nitrogen being heavier than air, can be put into a partially filled drum of the "A" Side forming a protective layer which will prevent any moisture from reaching the material in the drum. It takes only a small quantity of the nitrogen to form this layer and it will not mix with or contaminate the Iso.

### ■ Mixing

Care should be taken to ensure proper mixing of the VFI-540US Aluminum. Drums must be power mixed. Mix all "A" Side (Iso) drums with a 1½ horsepower air driven mixer (do not use auger type mixer) for a minimum of 15 to 45 minutes depending upon the temperature of the product on the day of application. The shaft must have collapsible blades to fit through the bung opening in the drum and should be long enough to reach the bottom of the drum. Three or

four drums of the "A" Side (Iso) can be mixed in an hour when you start up in the morning. The ultra violet protection in VFI-540US Aluminum coating is aluminum paste. The aluminum paste settles to the bottom of the drum during shipment and storage. Therefore, the "A" Side (Iso) drum has to be thoroughly mixed before spraying; otherwise the aluminum paste will be left on the bottom of the drum. Product sprayed with aluminum paste still on the bottom of the drum will not perform as designed and the coating will not last as long. The coating finish may also appear streaky if all drums are not mixed properly.

### ■ Material Preparation

Thoroughly power mix Iso component before beginning to apply. Usually this takes a minimum of 15 minutes per drum with proper mixing equipment. For specific mixers, blade and shaft length, contact VFI. A hand mixer is not adequate.

### ■ Equipment

Plural component spray equipment capable of maintaining a constant temperature of 130°- 160°F, 2000 psi minimum static pressure and 1800psi dynamic pressure with a 1:1 volume mix ratio. Through testing, it has been determined that installation at the proper temperature of 130° to 150°F, 1800 psi minimum pressure at the gun will produce the optimum membrane.

### ■ Reactivity

Tack free time is 10-30 seconds when sprayed with hot plural component airless spray equipment.

### ■ Cure Time

Applied coating will set in 2-10 minutes at 70°F, depending on film thickness and the substrate temperature. Product can be placed into service after four hours of cure time at 70°F minimum.

**Corporate Office: P.O. Box 344 / Brookfield, WI 53008 / 800-307-9218 / 262-787-0400 / Fax: 262-787-0500**

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