

U.L. RATED POLYUREA HYBRID ROOFING ELASTOMER

■ **Description**

VFI-540/FR Aluminum is a 96% solids, two component one to one by volume polyurea hybrid coating.

■ **Usage**

VFI-540/FR Aluminum is intended for use as a spray applied, fire retardant, protective roof coating for use over concrete, metal, polyurethane foam and smooth built-up roofs. VFI-540/FR Aluminum should

not be used directly over rough built-up roofs unless polyurethane foam is used to create a smooth surface. VFI-540/FR Aluminum can also be used over various single-ply membranes. Contact Volatile Free, Inc. for more information.

■ **Color**

Aluminum. Note: Aluminum color is dispersed in the isocyanate component.

Physical Properties

■ **Weatherability**

ASTM G-53
Q.U.V. 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 polyurethane foam insulation.

■ **Chemical Resistance**

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

■ **Tensile**

ASTM D-412
Strength: 1294 psi
Elongation: 157%
Permanent Set: 10% max.

■ **Hardness**

ASTM D-2240
Shore A 85 ± 3

■ **Tear Resistance**

ASTM D-624
Die C 114 pli

■ **Abrasion Resistance**

Excellent

■ **Water Absorption**

ASTM G-471 1.0% max.

Liquid Component Properties

■ **Solids**

Weight: 97%
Volume: 96%

■ **Viscosity**

Poly Component: 630 cps @ 77°F
Iso Component: 760 cps @ 77°F

■ **Density**

Poly Component:
7.7-8.7 lbs./gal. (S.G. 1.08-1.10)
Iso Component:
9.28-10.28 lbs./gal. (S.G. 1.37-1.39)

■ **V. O. C**

Aluminum color-27 grams/liter.

■ **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

■ **Warning**

VFI-540/FR Aluminum is sensitive to moisture. Store in a dry place between 45° and 85°F. **Do not** preheat over 100°F without mixing. Shelf life is six months for the "A" Side (Iso) and one year for the "B" Side (Poly) in original unopened containers. 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.

Application

■ Mixing

Care should be taken to ensure proper mixing of VFI-540/FR Aluminum. Drums must be power mixed. Mix all "A" Side (Iso) drums with a 1½ horsepower air driven mixer for a minimum of 15 minutes on the day it will be applied. 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-540/FR 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.

■ Thinning

Do not thin.

■ Equipment

Plural component spray equipment capable of maintaining a constant temperature of 130° - 160°F, 1500 psi minimum pressure and a 1:1 volume mix ratio. Through testing, it has been determined that installation at the proper temperature of 130° to 150°F, 1500 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 the film thickness and substrate temperature. Product can be placed into service after four hours of cure time at 70°F minimum.

■ Surface Preparation

Please refer to V.F.I. Roofing Specifications relating to your particular project.

■ Surface Preparation for Asphalt Contamination

Material applied over thick uncured asphalt will cause bleed through and possible delamination. We even find "black jack" type products on metal roofs, where repairs were attempted around stacks, units and even on seams and fasteners to be a problem. Whether the asphalt is totally cured or not has to be the contractor's determination, NOT Volatile Free, Inc.'s. If the asphalt product is old, hard and totally cured out, there is no problem going right over it with VFI-540/FR Aluminum. If the asphalt is soft and you can move it with your finger, it is not totally cured. This means that there still might be oil present that could leach out and cause discoloration and/or delamination. If the asphalt is not too thick and you see no signs of oil, we have found it extremely helpful to coat those areas with 1 to 1½ gallons per 100 sq. ft. of our VFI-550 Aluminum Single Component Moisture Cured Urethane. Let the VFI-550 Aluminum cure and then recoat with VFI-540/FR Aluminum. This forms a barrier between the asphalt and VFI-540/FR Aluminum. If the asphalt is too thick or uncured, it must be removed.

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