

## POLYUREA HYBRID ROOFING ELASTOMER

### ■ Description

VFI-535 is a 100% solids by volume, two component one-to-one by volume polyurea hybrid coating.

### ■ Usage

VFI-535 Copper is intended for use as a spray applied protective roof coating for use over concrete, metal, polyurethane foam and smooth built-up roofs. VFI-535 Copper should not be used directly over rough built-up

roofs unless polyurethane foam is used to create a smooth surface. VFI-535 Copper can also be used over various single-ply membranes. Contact Volatile Free, Inc. for more information.

### ■ Color

Red tone copper. Note: Copper color is dispersed in the isocyanate component.

## Physical Properties

### ■ Weatherability

Excellent.

### ■ Chemical Resistance

Good salt and solvent resistance. Fair resistance to acid and alkali.

### ■ Tensile

ASTM D-412

Strength: 1647 psi min.

Elongation: 172% min.

Permanent Set: 10% max.

### ■ Adhesion

ASTM D-4541

Strength: 900 lb./in.<sup>2</sup> with adhesive failure.

### ■ Hardness

ASTM D-676

Shore A 88 - 90

Shore D 34 - 37

### ■ Tear Resistance

ASTM D-624

Strength: 189 pli

### ■ Abrasion Resistance

Excellent

### ■ Water Vapor Permeability

ASTM E-96

Method BW 0.025 perm in.

## Liquid Component Properties

### ■ Solids

Weight: 100%

Volume: 100%

### ■ Viscosity

Poly Component: 750 ± 300 cps @ 77°F

Iso Component: 400 ± 200 cps @ 77°F

### ■ Specific Gravity

Poly Component: 1.004 g/ml

Iso Component: 1.198 g/ml

### ■ Density

Poly Component: 8.36 lbs./gal.

Iso Component: 9.98 lbs./gal.

### ■ V. O. C

Contains no Volatile Organic Compounds.

### ■ 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-535 Copper is sensitive to moisture. Store in a dry place between 45° and 85°F. 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.

## Application

### ■ Mixing

Care should be taken to ensure proper mixing of VFI-535 Copper. 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-535 Copper coating is copper pigment. The copper pigment 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 copper pigment will be left on the bottom of the drum. Product sprayed with copper pigment 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, 2500 psi minimum pressure and a 1:1 volume mix ratio. It is recommended that only a Probler gun with a #1 or #2 tip be used for spraying. The Probler gun offers ease of application along with the best spray pattern. Through testing, it has been determined that installation at the proper temperature of 130° to 150°F, 2500 psi minimum pressure at the Probler gun utilizing a #1 mixing chamber, will produce the optimum membrane. Any deviations from this whether it may be temperature, pressure, size, type of gun, will all contribute to the production of a lesser product than the physicals stated on the V.F.I. Product Data Sheet. In other words, a #2 or #3 mixing chamber, may give you a wider spray pattern and apply more uniformly, but not have the same physical properties that are achieved with a #1 chamber.

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.

A gap gun or a GX-7 gun will produce a cured membrane but will not achieve the finished film that is specified by Volatile Free, Inc. Therefore, if a ten year full systems warranty is required from V.F.I., you must use a Probler gun.

### ■ 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-535 Copper. 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-535 Copper. This forms a barrier between the asphalt and VFI-535 Copper. If the asphalt is too thick or uncured, it must be removed.

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

This information and technical advice provided herein are believed to be reliable and accurate to the best knowledge of Volatile Free, Inc., as based on tests and should serve only as a recommendation. As the manufacturer, Volatile Free, Inc. makes no representations or warranties of any kind, expressed, implied or statutory, including but not limited to all implied warranties of merchantability or fitness for use or a particular purpose for the product. Volatile Free, Inc. makes no representations or warranties as to the results of the use of the product and assumes no obligation or liability in connection therewith. Volatile Free, Inc. is not liable for any incidental or consequential damages of any sort from use of this product. The information provided herein is subject to change at any time without notice. Information changes may include, but are not limited to, commercial and technical changes, changes in pricing, physical characteristics and packaging.