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## **FIFTEEN YEAR LEAK-FREE SPECIFICATION FOR VFI 600 SERIES FLUID APPLIED ACRYLIC MEMBRANE WITH VFI-991 SILICONE TOP COAT FOR NEW CONSTRUCTION OR RECOVERY BOARD INSTALLATION**

### **1 GENERAL:**

#### **1.01 General System Description**

- A.** VFI-640 Acrylic Base Coat with VFI-991 Silicone Top Coat is recommended for all new construction and recovery board installations.
- B.** Roofing with VFI-640 Acrylic Base Coat with VFI-991 Silicone Top Coat offers a truly sustainable roofing system that is fully reinforced, seamless, monolithic and fully adhered. After the service life of the original application has been met, the roof can be renewed by simply applying additional layers of VFI-991 Silicone Top Coat to the existing roof system.
- C.** Specifications here include guidelines for board installation and reinforcing all areas of the roof. This is a general installation guide specification and is not a project-specific specification. It is the responsibility of the owner, project manager and contractor to ensure that this general installation guide is followed when work pertains to the project.
- D.** A Volatile Free, Inc. Technical Representative shall approve in writing any material substitutions, deviations from and/or addendums to this specification.

#### **1.02 Contractor to:**

- A.** Provide all labor and materials, equipment and accessories necessary to repair, clean and prepare existing membrane. Install Volatile Free, Inc.'s VFI-640 Acrylic Base Coat with VFI-991 Silicone Top Coat in accordance with this specification and manufacturer's instructions. Reference the following sections for more detailed information.
  - 1.** Environmental requirements (1.07)
  - 2.** Quality Preparation Program (1.08)
  - 3.** Board Installation (3.01)
  - 4.** Install Hybrid Coating System. (3.02 - 3.10)
  - 5.** Traffic areas and walkways (3.11)
  - 6.** Warranty (5.0)

#### **1.03 Approved Materials and Contractors:**

- A.** The contractor and materials associated with the project shall be used only if

approved by VFI and Owner.

- B. A minimum of five years' roofing experience is required from the applicator in order to apply the waterproofing materials specified. The applicator must have a current Certification certificate from Volatile Free, Inc.
- C. VFI shall be a single source of the roofing system.
- D. The contractor's qualifications and equipment must be approved by VFI.
- E. Unspecified materials shall be submitted to the architect/ owner for approval prior to the bid date. In requesting approval, a letter of certification must be signed by an officer of the manufacturer, stating that the alternative material is equal to or better than the specified product. The manufacturer shall have a minimum of five years manufacturing experience.
- F. Products used must have Miami Dade NOA or Florida Product Approval.

**1.04 Submittals:**

**A. Customer:**

- 1. The VFI pre-job form should be filled out and sent to VFI for approval.
- 2. **Signed and filled out application rates on Warranty Specification/Affirmation Signatures Form, see page 10**

**B. Manufacture:**

- 1. VFI's published technical data, and certified data to support published ratings.
- 2. Contractor's certification certificate issued prior to bid date from VFI.
- 3. VFI's Technical Representative shall provide written instructions on care and maintenance and repair of the coating system, within the scope of the maintenance agreement or guarantee.

**1.05 Product Delivery, Storage, and Handling:**

- A. Deliver VFI materials in unopened containers with VFI labels affixed. Include the following on the label of each container: Manufacturer's name, product name, product type, lot number, mixing instructions, and precautions.
- B. Contractor shall have materials delivered in sufficient quantities so as not to cause delays in the work.
- C. Contractors shall be responsible for storage and protection of all materials required. Materials shall be stored in a manner so as not to exceed the VFI specified temperature limitations. (see product label or data sheet) In all cases, the storage and handling of materials shall conform to the requirements of VFI and the applicable safety regulatory agencies.
- D. It is the responsibility of the contractor to calculate and add a loss factor due to wind, surface profile and overspray.

**1.06 Pre-Construction Conference:**

- A. Prior to the start of the project, a meeting shall be held at the job site attended by the Contractor's Representative, Technical representation of VFI, and the Owner's representative to review materials, application procedures, and all items associated to this phase of the work. **(Optional)**
  
- B. The installation of this system shall be accomplished periodically in the presence of or with the advice of the Manufacturer's Technical Representative. Contact VFI for assistance.

**1.07 Environmental Requirements:**

- A. Install all materials in strict accordance with all published safety, weather and temperature precautions given by VFI.
  
- B. The contractor is to take precautions to protect this building project, other adjacent facilities and property.
  
- C. All air intake ventilation equipment shall be turned off or otherwise modified to prevent fumes from entering building.
  
- D. Blowers, air conditioning units, and evaporative coolers shall be disconnected or otherwise modified to prevent fumes from penetrating into the building or from contaminating the roof surface with condensing water.
  
- E. No smoking signs to be posted as mandated by local fire officials
  
- F. Do not install coating materials under the following conditions:
  - 1. When surfaces are wet or rain is imminent
  
  - 2. **Spray Application-** When wind velocity is above fifteen (15) MPH without using a windscreen. In conjunction with a wind screen, protective coverings must be fastened to stay secure in wind and be vented if used in conjunction with preventing moisture collection.
  
  - 3. Do not install VFI 600 Series Acrylic Coatings when the temperature is below 50° F.

**1.08 Quality Preparation Program:**

- A. Roof shall be free of debris and fixtures not secured as part of roof mounted equipment.
  
- B. When a labor and material warranty is requested the following environmental conditions, including the overall weather conditions, shall be recorded by the contractor on the Daily Quality Control Report and submitted with the finish structured guarantee request: General Weather Conditions (i.e. cloudy, sunny, rainy, etc.), Surface Temperature, Surface Moisture, Ambient Temperature, Relative Humidity and Wind Velocity.
  
- C. All products must be mixed with proper equipment on the day of application. See product label or Product Data Sheet for instructions.
  
- D. Coating thickness shall be checked during application for proper thickness per specification; as stated on the warranty procedures or on work order, whichever is

greater.

**2 PRODUCTS:**

**2.01 Materials:**

**A.** All products listed are manufactured, supplied, or approved by VFI of Brookfield, Wisconsin.

1. Polyester Fabric: PF Mesh 6", 12", 20" or 40" non-woven polyester fabric provided by VFI

2. Rust Primer: VFI-1074

3. Coating: VFI 640 Acrylic Base Coat in manufacturer's standard colors.

This coating, shall meet the following mean technical requirements:

a. Solids:	by Volume	51%
b. Tensile:	ASTM D-2370	350 +/- 50 psi
c. Elongation:	ASTM D-2370	200% +/- 25%
d. Permeance	ASTM D-1653	27(wet), 13(dry)
e. Flexibility @ O° mandrel (pass/ fail)	ASTM D-522B	Pass
f. Fungi Resistance (pass/ fail)	ASTM G-21	Pass
g. Accelerated Weatherability @ 1,000 Hrs. (pass/ fail)	ASTM D-4798	Pass

4. Top Coating: VFI-991 Silicone roof coating in manufacturer's standard white color (unless otherwise specified by owner)

This coating shall meet the following mean technical requirements:

a. Solids:	by Volume	70% +/- 1
b. Tensile:	ASTM D-412	380 psi
c. Elongation:	ASTM D-412	250%
d. Permanent Set	ASTM D-412	1% max
e. Hardness Shore A	ASTM D-2240	60
f. Tear Resistance	ASTM D-624	40 pli
g. Water Vapor Perms	ASTM-E-96 @20MIL	5 perms

4. VFI-630 Flashing Grade Acrylic Coating

5. VFI-3220 Traffic Coating for walk paths.

6. VFI-630 Flashing Grade Acrylic Coating.

**2.02 Other Materials Required:**

**A.** All other materials shall be approved by VFI as per Section 1.04, A.

**3 EXECUTION:**

**NOTE:** Care must be taken to ensure that the substrate is dry and properly prepared.

**3.01 Board Installation:**

- A. If installing over an existing gravel or ballasted roof, remove all loose rock. If adhering the board directly to an existing gravel or ballasted roof, the remaining surface must be cleaned prior to installation of adhesives.

Adhere board to roof deck with proper fasteners or adhesives in accordance with local building code and manufacturer's installation instructions. Please verify the proper requirements with your local building code authority.

- B. Stager all board joints.
- C. Lay boards with edges in moderate contact without forcing. Cut boards to fit neatly to perimeter blocking and around penetrations through roof.
- D. Install cant strips at all internal corners and metal drip edge or coping cap on outside perimeter.
- E. Approved recovery boards include 5/8" tongue-and-groove plywood or OSB, tapered ISO or tapered EPS with 1/2" Securock cover board, 1/2" Securock, ISO or EPS (minimum 1" thick) with 1/2" Securock cover board.

**3.02 Board Seams:**

Using 6" fabric seal all board seams. Apply a base coat of VFI-640 to the area to receive fabric. Place the fabric into the still wet coating being careful to center the board seam in the middle of the fabric. Using a brush, remove all wrinkles, voids, and fish mouths. Immediately apply a saturation coat of VFI-640 to cover the fabric.

**6" fabric is packaged in 300 lineal ft. rolls. To figure how many lineal feet of 6" fabric is necessary, multiply number of boards by 12 (8' X 4' sheets) or 8 (4' X 4' sheets).**

**Each roll of 6" fabric will require 1 five gallon pail of VFI-640 to apply.**

**3.03 Roof Perimeter:**

Using the 12" or 20" fabric, waterproof entire roof perimeter. Apply a base coat of VFI-640 to the area to receive fabric. Using a brush, embed the fabric into the base coat while it is still wet taking care to remove all wrinkles, voids, and fish mouths. Immediately apply a saturation coat of VFI-640 to cover the fabric. Terminate fabric 1/4" below existing flashings. Continue waterproofing onto roof a minimum of 6". On parapet walls higher than 14" hang 40 inch fabric "wallpaper style" beginning 1/2" below coping cap/ flashing and extending 10" onto roof.

**12" and 20" fabric are packaged in 300 lineal foot rolls.**

**Each roll of 12" fabric will require 2 five gallon pails of VFI-640 Acrylic Base Coat to apply.**

**Each roll of 20" fabric will require 3.3 five gallon pails of VFI-640 to apply.**

**40" fabric is packaged in 1,000 square foot rolls. Coverage rate of the VFI-640 Acrylic Base Coat to apply 40" fabric will be 2.7 gallons per 100 square feet.**

**3.04 Roof Penetrations:**

Using 12" or 20" fabric, seal all roof penetrations. Apply a base coat of VFI-640 6" up penetration and 6" around penetration on the roof. Cut skirt flashings in fabric. Lay the fabric into the still wet base coat spreading the skirts onto the roof while setting the solid piece of fabric firmly to the penetration. Remove all wrinkles and voids in fabric using a brush. Immediately apply a saturation coat of VFI-640 to cover the fabric.

Cut a piece of fabric to fit around penetration and cover fingers to act as a target. Apply a base coat of VFI-640 on roof deck around penetration and past the fingers of the previously completed fabric flashing. Embed the target fabric into still wet base coat. Remove all wrinkles and voids in fabric using a brush. Immediately apply a saturation coat of VFI-640 to cover the target fabric.

**12" and 20" fabric are packaged in 300 lineal foot rolls.**

**Each roll of 12" fabric will require 2 five gallon pails of VFI-640 Acrylic Base Coat to apply.**

**Each roll of 20" fabric will require 3.3 five gallon pails of VFI-640 to apply.**

**3.05 Roof Top Equipment and Curbs:**

Using the 12" or 20" fabric, waterproof all roof top equipment and curbs. Apply a base coat of VFI-640 to the area to receive fabric. Embed the fabric into the base coat while it is still wet taking care to remove all wrinkles, voids, and fish mouths. Immediately apply a saturation coat of VFI-640 to cover the fabric. Terminate fabric ¼" below existing flashings. Continue waterproofing onto roof a minimum of 6".

**12" and 20" fabric are packaged in 300 lineal foot rolls.**

**Each roll of 12" fabric will require 2 five gallon pails of VFI-640 Acrylic Base Coat to apply.**

**Each roll of 20" fabric will require 3.3 five gallon pails of VFI-640 to apply.**

**3.06 Roof Drains:**

Remove drain ring. Clean the drain bowl of all contaminants including previous repair items. Metal drain bowls should be primed with VFI-1074 primer.

**Option 1:** Apply a base coat of VFI-640 to the drain bowl and extend onto roof a minimum of 6". Cut a piece of reinforcing fabric to line the drain bowl (overlap where fabric meets fabric by 2"-3"). Lay fabric into still wet coating taking care to line the inside of the drain bowl tightly. Make relief cuts in remaining fabric to allow it to transition from the drain bowl to the roof. Use a brush to smooth out all wrinkles and voids.

Cut another piece of fabric for the roof area around the drain taking care to make it large enough to cover the fingers from the previous fabric. Cut a hole roughly the size of the drain pipe in the middle of the fabric. Apply a base coat of VFI-640 onto roof and drain bowl. Embed the fabric into still wet base coat taking care to ensure the hole is in the middle of the drain bowl. Cut fingers from the hole to edge of drain bowl to allow the fabric to transition from the roof to the drain bowl. Use a brush to remove all wrinkles and voids. Immediately apply a saturation coat of VFI-640 to cover the fabric.

**6" fabric is packaged in 300 lineal foot rolls. Each roll of 6" fabric will require 1 five gallon pail of VFI-640 Acrylic Base Coat to apply.**

**Option 2: Make sure all acrylic coatings are complete prior to using this option.** Cut a piece of 6" butyl-backed fabric to fit around the inside of the drain bowl (make sure it is long enough to wrap over itself by 2"-3"). Remove the backing and apply butyl-backed fabric 3" into the drain bowl taking care to form the fabric to the bowl with minimal voids. Make relief cuts in the remaining butyl-backed fabric to allow it to transition from the drain bowl to the roof.

Cut strips of butyl-backed fabric to fill in areas on the roof-to-drain bowl transition left bare by relief cuts.

Apply 1 coat of VFI-993 Flashing Grade Silicone Coating over the entire assembly taking care to seal all exposed edges of butyl-backed fabric.

**6" Butyl-backed fabric is packaged in 50 lineal foot rolls. Each drain will require approximately 0.5 gallons of VFI-993 to complete.**

### **3.07 Scuppers:**

Clean the scupper of all contaminants including previous repair items. Metal scuppers should be primed with VFI-1074 Primer.

**Option 1:** Cut an appropriate size piece of fabric to wrap around scupper opening (make sure it is large enough to wrap over itself 2"-3"). Apply a base coat of VFI-640 extending past where the existing roofing assembly terminates in scupper by 2"-3" and onto main roof area by 6". Lay fabric into the still wet base coat. Make relief cuts in fabric to allow it to conform to the transition from the scupper to the wall. Repeat this procedure in reverse to seal the wall-to-scupper transition. Use a brush to smooth out all wrinkles and voids. Immediately apply a saturation coat of VFI-640 to cover the fabric.

**Option 2: Make sure all acrylic coatings are complete prior to using this option.** Cut a piece of 6" butyl-backed fabric to extend past where existing roofing membrane terminates in scupper. Remove the backing and apply to the surface taking care to center the existing termination in the middle of the fabric. Smooth out all wrinkles and voids. Cut another piece of 6" butyl-backed fabric to line the inside of the scupper. Remove the backing and form it to the scupper walls and roof deck. Overlap the first piece by 2"-3". Cut relief cuts in the fabric to allow it to transition from the inside of the scupper to the parapet walls and roof deck. Cut small pieces of butyl-backed fabric to fill bare areas left by the relief cuts. Apply 1 coat of VFI-993 Flashing Grade Silicone Coating over the entire assembly taking care to seal all exposed edges of butyl-backed fabric.

**6" Fabric Backed Butyl Tape is packaged in 50 lineal ft. rolls. Each roll of 6" Fabric Backed Butyl Tape will require 2 gallons of VFI-993 to apply**

### **3.08 Coping Caps and Existing Flashings (Optional):**

Remove all contaminants including previous repair items from seams and fasteners in coping caps and existing flashings. Apply VFI-630 Flashing Grade Acrylic Coating to encapsulate all fasteners in the coping cap or existing flashings. Extend the coating a minimum of 1" past the fastener.

**One gallon of VFI-630 will treat approximately 450 fasteners.**

**Option 1:** Cut a piece of 6" fabric long enough to encapsulate the seams in the coping cap or existing flashing. Apply a base coat of VFI-640 extending past the seams 4" in both directions. Embed the fabric into the still wet base coat putting the seam in the middle of the fabric. Use a brush to smooth out all wrinkles, voids, and fish mouths. Immediately apply a saturation coat of VFI-640 to cover the fabric.

**6" fabric is packaged in 300 lineal foot rolls.**

**Each roll of 6" fabric will require 1 five gallon pail of VFI-640 Acrylic Base Coat to apply.**

**Option 2:** Make sure all acrylic coatings are complete prior to using this option. Cut a piece of 6" butyl-backed fabric long enough to encapsulate the seams in the coping cap or existing flashing. Remove the backing and apply the fabric to the seams centering the seam in the middle of the fabric. Apply 1 coat of VFI-630 Flashing Grade Acrylic Coating over the fabric taking care to seal all exposed edges of the butyl-backed fabric.

**6" Fabric Backed Butyl Tape is packaged in 50 lineal ft. rolls.**

**Each roll of 6" Fabric Backed Butyl Tape will require 2 gallons of VFI-993 to apply**

### **3.09 Roof Field:**

Using a 10" roof brush on an extension handle apply a base coat of VFI-640 to the substrate. Embed the 40" fabric into the still wet base coat. Use the roof brush to smooth out all wrinkles, voids, and fish mouths. Immediately apply a saturation coat of VFI-640 over the fabric using the 10" roof brush.

Overlap previously detailed areas (perimeter, penetrations, roof-top equipment, curbs, drains, and scuppers) by a minimum of 4".

**40" fabric is packaged in 1,000 square foot rolls. Coverage rate of the VFI-640 Acrylic Base Coat to apply 40" fabric will be 2.7 gallons per 100 square feet.**

### **3.10 Coating Application:**

Apply 1 or 2 coats of VFI-991 by brush, roller, or airless sprayer over the entire roof area **at a combined coverage rate of 1.5 gallons per 100 sq. ft. (total of 24 wet mils, 16 dry mils)**

### **3.11 Traffic areas and walkways (optional)**

Mark off perimeters of traffic areas and walkways using painter's tape. Apply two coats of VFI-3220 Traffic Coating in a contrasting color at a combined coverage rate of 1.6 gallons per 100 sq. ft.

Remove painter's tape.

**NOTE: VFI recommends adding a loss factor due to wind, surface profile and overspray. It is the responsibility of the contractor to calculate the correct amount of material to achieve the required dry film mils as per specification.**



**4 FIELD QUALITY CONTROL:**

**4.01 Inspection:**

- A. Coating Thickness:** The finished dry film thickness will measure a minimum of 37 dry mils.
- B. No traffic shall be permitted on the coated surface for a minimum of three (3) days.** Damage to the surface by other trades shall not be the responsibility of the roofing contractor or Volatile Free, Inc.
- C. Defects:** There shall be no delamination, lifting blisters, pinholes, voids, or membrane defects of any kind.
- D. Variations:** Any variations from specified procedures or limits found by the contractor, representatives of VFI, or the owner, shall be immediately corrected by the contractor at their own expense.

**4.02 Job Site Clean up**

- A.** Clean up all debris, excess materials and equipment and remove from site.

**5 WARRANTY:**

**5.01 Requirements:**

- A.** VFI warrants that the material supplied will meet or exceed physical properties as published.
- B.** The contractor shall warrant that all work performed will be free from defects in materials and workmanship for a period of two years. Upon notice of defect in writing to the contractor, the contractor shall make necessary repairs or replacements of the defective work in question.
- C.** A leak-free warranty by VFI is available for commercial. The contractor must make application to VFI in accordance with the published warranty policy prior to start of work, to qualify the project for a no leak warranty.

**5.02 Inspection by Manufacturer**

- A.** A final inspection of the roof will be conducted by VFI's Technical Representative to confirm the watertight integrity of the installation of the Roofing System.

**FIFTEEN YEAR SPECIFICATION FOR  
ACRYLIC/ SILICONE HYBRID SYSTEM**

**SUSTAINABILITY.  
DURABILITY.  
FLEXIBILITY.**

**WARRANTY SPECIFICATION/AFFIRMATION OF SIGNATURES**

**Type of Warranty:**

- A. Volatile Free, Inc. Fifteen Year Warranty shall be issued within thirty (30) days of final payment and successful roof inspection.

**Substrate selected:**

**Primer application rate required:**

**Application method:**

**Basecoat application rate required:**

**Topcoat application rate required:**

<b><u>Volatile Free Inc.</u></b>
Printed Name: _____
Title: _____
Date Approved: _____
Warranty Project # _____

<b><u>Applicator</u></b>
Printed Name: _____
Title: _____
Company: _____
Address: _____
City, State: _____
Telephone: _____

Please sign and date below to acknowledge that you read and understand the FIFTEEN YEAR SPECIFICATION FOR VFI-600 Series Acrylic System.

PLEASE SEND THIS SIGNED COPY TO VOLATILE FREE, INC.; 19500 JANACEK COURT, BROOKFIELD, WI 53045 OR FAX: 262-787-0500

\_\_\_\_\_  
Signature

\_\_\_\_\_  
DATE

# FIFTEEN YEAR SPECIFICATION FOR ACRYLIC/ SILICONE HYBRID SYSTEM

**SUSTAINABILITY.**

**DURABILITY.**

**FLEXIBILITY.**

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