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## **SPECIFICATION FOR VFI 600 SERIES FLUID APPLIED ACRYLIC MEMBRANE WITH VFI 3220 AS A TRAFFIC COATING FOR REHABILITATION OF SINGLE PLY DECKS**

### **1 GENERAL:**

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

- A.** VFI- 600 Series Acrylic Restoration Coating System is recommended for single-ply roofing membranes. Consult with Volatile Free, Inc. (VFI) for additional information when restoring previously coated projects.
- B.** Restoring with VFI 600 Series Acrylic will preserve and extend the useful life of the roof by protecting the roof's exposure to common degrading elements and weather conditions. The use is restricted to circumstances where the roof surface is in sound condition, but requires a renewal of the roof surface due to the normal effect of aging and use.
- C.** Specifications here include guidelines for preparation, priming 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.
- E.** Conditions to check and corrections to consider are: The type of the existing system must be identified and all existing membranes must be well adhered and intact.

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

- A.** Provide all labor and materials, equipment and accessories necessary to repair, clean and prepare existing single ply membrane weathered surfaces. Install Volatile Free, Inc.'s primer and Acrylic Roof Coating System 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. Preparation of the surface to receive work. (3.01)
  - 4. Wash the surface of the existing roof as recommended by VFI. (3.02)
  - 5. Install Acrylic Coating System. (3.03 - 3.11)
  - 6. Traffic areas and walk ways (3.12)
  - 7. Warranty (5.0)

**1.03 Work Excluded:**

- A. Repair to structural components of the roof
- B. Replacement of or modification to drains, vents, ducts, metal caps or other penetrations
- C. Installation of materials to change slope or otherwise facilitate water drainage

**1.04 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' 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. The contractor needs to submit proof of insurance to VFI.
- G. Products used must have Miami Dade NOA or Florida Product Approval.

**1.05 Submittals:**

- A. **Customer:**
  - 1. Warranty applied for should be filled out and sent to Volatile Free, Inc
- 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.

**1.06 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.

**1.07 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. Lift all non-secured units for access beneath them for the entire project.
- C. All preexisting membranes must be fully adhered and existing systems must be identified.
- D. Install all materials to change the pitch or otherwise facilitate water drainage.

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- E. All products must be mixed with proper equipment on the day of application. See product label or Product Data Sheet for instructions.
- F. 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. Seam Tape: BR TAPE 4" or 6" Butyl Reinforced Seam Tape provided by VFI
  - 2. Polyester Fabric: PF Mesh 6", 12", 20" or 40" polyester fabric provided by VFI
  - 3. Wash: VFI-1009 Cleaning Concentrate
  - 4. Rust Primer: VFI-1074
  - 5. Coating: VFI 600 Series Acrylic roof coating, in manufacturer's standard white color.

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

- 6. VFI-630 Flashing Grade Acrylic Coating
- 7. Roofing Granules- To provide anti-skid surface for traffic areas and walkways.

**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. The owner and/or contractor must correct any defect in the condition of the existing substrate prior to the coating, otherwise, these defects may adversely affect the condition of the coating over time, necessitating maintenance and/or repair and affecting the warranty. The contractor is responsible

in making sure the existing roof is sound, stable and a well-secured surface. If this criteria is not met, VFI 600 Series Acrylic roof rehabilitation is not recommended.

**3.01 Membrane Preparation:**

- A. The use is restricted to circumstances where the membrane surface is in sound condition, but requires a renewal of the membrane surface due to the normal effect of aging and use.
- B. All surfaces shall be clean and dry, and free of any dirt, dust, gravel, oil, surface chemicals or other contaminants which may be detrimental to optimum adhesion of the coating system. Remove large volumes of dirt, leaves and other debris with a broom and/ or air blower.
- C. The existing membrane is to be repaired and structural components of the roof should be complete. Particular care should be taken when inspecting field fabricated seams, flashing and terminations. All damaged drains, vents, ducts, gutters, metal caps, flashing or other penetrations must be replaced or modified.
- D. Inspect flashing, seams, cracks, penetrations and terminations for damage or stress caused by membrane shrinkage and repair. Inspect the entire roof surface and flashings for any open seams, tears, cuts or other damage. Repair any damage to avoid water getting blown under the membrane during the cleaning process.
- E. An infrared scan has been performed and any wet insulation has been removed and replaced.
- F. Loose or backed-out fasteners must be tightened or replaced with oversized fasteners.
- G. Remove dirt, roof cements and cold applied materials detrimental to adhesion and application of roofing materials.
- H. The installation of materials to change the pitch or otherwise facilitate the water drainage has been completed.

**Caution: When pressure washing old membrane, care must be taken not to damage membrane or exposed reinforcement.**

**3.02 Surface Wash:**

- A. Remove large volumes of dirt, leaves and other debris with a broom or blower. Inspect the roof surface and flashings for any open seams, tears and cuts. All defects must be repaired to prevent material from being blown under the membrane during the cleaning process. Lastly, rinse the roof with water and allow it to dry completely.

**NOTE: Allow roof to dry before applying VFI-1009 Cleaning Concentrate**

- B. VFI-1009 Cleaning Concentrate should be diluted at a 1:10 ratio with water. Apply the diluted cleaning solution to the dry substrate under low pressure using a Hudson type agricultural sprayer **at the rate of 2,000 sq. ft. per gallon of VFI-1009.** Allow

the solution to stand for a minimum of 15 minutes. Low areas and depressions in the substrate having excessive dirt build-up may require additional solution and/or scrubbing with a stiff-bristled broom. Extremely stubborn areas may require treatment with a more concentrated dilution. For best results, using a pressure washer with 2,000 psi, start washing at the lower end and work up to the top of the roof. Keep the tip close enough to loosen all contaminants. Rinse back down the slope to remove contaminants and wash the solution from the roof. (See Product Data Sheet)

- C. Attach a wand or extension to the high pressure hose and use a standard spray tip to achieve maximum cleaning of the substrate. Repeat rinsing as required to remove all cleaning solution. Allow the substrate to completely dry prior to the application of any coating materials including primer.
- D. Areas containing grease, oil, animal fats or other surface contaminants shall be scrubbed with liquid detergent (Simply Green or equal) or tri-sodium phosphate until clean.
- E. Use concentrated chlorine solution to treat areas of mildew, fungus, or algae.
- F. All cleaning agents must be rinsed off of roof and allow the roof to dry before proceeding.
- G. All led boot flashings should be cut at the base and removed from penetration. Metal pipes should be cleaned, rust sanded smooth, and primed with VFI-1074 primer prior to flashing with coating system per Section 3.04. PVC pipes should be scuff sanded with coarse sandpaper to create a profile then cleaned prior to flashing with coating system per Section 3.05.
- H. Pitch pans which are slack-filled Shall be filled with proper fill material prior to flashing with coating system per Section 3.05.

**NOTE: It is crucial to ensure that the preexisting substrate is clean and dry prior to coating with the VFI system. When primer is necessary, prime the entire roof prior to making any repairs with coatings.**

### **3.03 Roof Perimeter:**

Using 12" 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 ¼" below existing flashings. Continue waterproofing onto roof a minimum of 6".

**12" fabric is packaged in 300 lineal foot rolls.  
Each roll of 12" fabric will require 2 five gallon pails of VFI-640 to apply.**

### **3.04 Roof Penetrations:**

Using 12" 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" fabric is packaged in 300 lineal foot rolls.**

**Each roll will require 2 five gallon pails of VFI-640 to apply.**

### **3.05 Roof Top Equipment and Curbs:**

Using the appropriate size 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 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.

**See coverage rates in Section 3.03**

**Option 2:** 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-630 Flashing Grade Acrylic Coating over the entire assembly taking care to seal all exposed edges of butyl-backed fabric.

**6" Butly-Backed Fabric is packaged in 50 lineal foot rolls.  
Each drain will require ¼ of a gallon of VFI-630 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.

**See Coverage Rates in Section 3.05**

**Option 2:** Cut a piece of 4" 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-630 Flashing Grade Acrylic Coating over the entire assembly taking care to seal all exposed edges of butyl-backed fabric.

**Each roll of 4" fabric backed butyl tape is packaged in 50 lineal foot rolls.  
Each roll will take approximately 2 gallons of VFI-630 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.

**1 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 to apply.**

**Option 2:** Cut a piece of 4" 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.

**See coverage rate in section 3.07**

### **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".

**Each roll of 40" fabric is packaged in 1,000 sq. ft. rolls.**

**Each five gallon pail of VFI-640 will apply approximately 180 sq. ft. of 40" fabric.**

### **3.10 Protective Barrier**

Mix 1 part VFI-608, 1 part water, and 3 parts Type I, II portland cement. Using a brush, apply to surface to receive tile, pavers, travertine, etc. While slurry is still wet, embed 40" fabric. Use the brush to smooth out all voids, bubbles, and fish mouths. Immediately apply another coat of Slurry over fabric.

**\*Total coverage rate of VFI-608 should be 1.0 gallons per 100 sq. ft.**

**Allow to dry for 48 hours prior to applying the VFI-3220 Three- Part Epoxy Modified Acrylic Traffic Coating.**

### **3.11 Traffic Coating**

Pour contents of Part B (Catalyst) into Part A (slack-filled 5 gallon pail). Pour water into the used Part B container; set aside. Pour contents of Colorant container into Part A. Fill the partially empty colorant container half way with water from the used Part B container. Put lid on the colorant container and shake vigorously. Pour into Part A. Repeat this step until the bottom of the colorant can is visible. Pour remaining water in Part B container into Part A. Mix all three parts together with a drill mixer until even distribution of products and anti-skid aggregate is achieved.

Apply 2 coats of VFI-3220 Three- Part Epoxy Modified Acrylic Traffic Coating (color to be chosen by owner) **at a combined coverage rate of 200 sq. ft. per five gallon kit.**

**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 in the roof field will measure a minimum of 48 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. 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.

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**SUSTAINABILITY.  
DURABILITY.  
FLEXIBILITY.**

**WARRANTY SPECIFICATION/AFFIRMATION OF SIGNATURES**

**Type of Warranty:**

- A. Volatile Free, Inc. Five Year Warranty covering material only shall be issued within thirty (30) days of final payment.

**Substrate selected:**

**Primer application rate required:**

**Application method:**

**Basecoat application rate required:**

**Topcoat application rate required:**

**Volatile Free Inc.**

Printed Name:

\_\_\_\_\_

Title:

\_\_\_\_\_

Date Approved:

\_\_\_\_\_

Warranty Project #

\_\_\_\_\_

**Applicator**

Printed Name:

\_\_\_\_\_

Title:

\_\_\_\_\_

Company:

\_\_\_\_\_

Address:

\_\_\_\_\_

City, State:

\_\_\_\_\_

Telephone:

\_\_\_\_\_

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

\_\_\_\_\_  
Signature

\_\_\_\_\_  
DATE

# SPECIFICATION FOR VFI-600 SERIES ACRYLIC SYSTEM WITH VFI-3220 TRAFFIC COATING

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**SUSTAINABILITY.**  
**DURABILITY.**  
**FLEXIBILITY.**

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