

## ROOF COATING RESTORATION (RCR) SYSTEM OVER STRUCTURAL CONCRETE ROOF DECK

### Part 1. General Conditions

#### 1.01 Description

##### A. Scope of Work

Provide all materials, labor and equipment required for the installation of the Acrylic RCR System over the existing concrete roof deck including all ancillary products.

##### B. Related Work

1. Repair All Sheet Metal Defects
2. Repair All Flashing Defects
3. Surface Preparation
4. Perform Adhesion Tests
5. Install Acrylic RCR Membrane

#### 1.02 Performance Requirements

- A. Conform to applicable code for fire resistance ratings of roof system.
- B. All acrylic products must be domestically produced. Products produced outside of the US will not be accepted.
- C. Coating manufacturer must produce its own product. Private labeled acrylic coating products will not be accepted.
- D. The RCR acrylic coatings discussed in this specification have a moderate rate of water vapor transmission. They are not recommended for use on cold storage or cryogenic structures. Such structures may have constant high water vapor drive causing long-term accumulation of moisture in the insulation/deck. Consult manufacturer for vapor retardant systems to use on refrigerated structures

#### 1.03 Submittals

- A. Product Data: Product data on acrylic coating, physical and chemical properties, preparation of substrate required, product limitations, and cautionary requirements.
- B. Safety Data Sheets (SDS)
- C. Shop Drawings: Roof plan and details showing extent of roofing, intersections with adjacent surfaces, and details of expansion joints, counterflashing, and other items for a complete roofing system.
- D. Manufacturer's Installation Instructions: Indicate installation requirements and procedures.
- E. Certificates:
  1. Product certificates signed by the manufacturer certifying material is in compliance with the specified performance characteristics and criteria, and physical requirements.
- F. Sample copy of PM warranty
- G. Maintenance Data: For Acrylic RCR System to include in maintenance manuals.

H. Final Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.

#### **1.04 Quality Assurance**

A. Manufacturer:

1. Company specializing in the manufacturing of the system specified in this Section.

B. Installer:

1. Installer must be a Certified Licensed Applicator (CLA) by the Manufacturer providing the warranty and must be capable of receiving the specified warranty.

2. CLA to ensure all personnel are properly trained and have a full understanding of all OSHA safety requirements.

#### **1.05 Delivery, Storage, and Handling**

A. Deliver and store liquid materials and other products in their original unopened containers or packaging until ready for installation.

B. Materials shall be clearly labeled with the manufacturer's name, product identification, safety information, and lot numbers.

C. Store materials indoors whenever possible.

D. Protect stored products from freezing.

E. Comply with the manufacturer's instructions for handling and safety procedures.

F. Store and dispose of roofing tools, materials, containers, and equipment in accordance with requirements of local authorities having jurisdiction.

#### **1.06 Environmental Requirements**

A. Maintain logs of environmental conditions (temperature, humidity, and wind speed) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside of manufacturer's limits.

B. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

C. Do not install acrylic coating under the following conditions:

1. When ambient temperature is below 50° F or could fall below 32° F within 24 hours of application.

2. When rain or dew is likely to occur before the product dries.

3. In late afternoon, when facing conditions of high humidity, as overnight dew can cause product wash-off.

#### **1.07 Warranty**

A. Provide Manufacturer's (10-year) labor & material warranty covering leaks due to acrylic material failure.

### **Part 2. Products**

#### **2.01 Acceptable Products**

A. Insulation Board

1. Match existing material

B. Cleaners and Primers

## 1. Progressive Materials:

- a. PM P-140 2-part epoxy Primer

## C. Caulking Sealant

## 1. Acrylic caulking sealant meeting the following physical properties shall be approved:

- a. Elongation: >400%
- b. Tensile Strength: >350 psi
- c. VOC: <50g/L

2. Manufacturer, product name and number, and product data sheets must be submitted to PM for approval prior to starting any warranted projects.

## D. Flashing Grade Acrylic Sealant

- a. Progressive Materials AM - 400 series

2. Manufacturer, product name and number, and product data sheets must be submitted to PM for approval prior to starting any warranted projects.

## E. Reinforcing Fabric

## 1. Progressive Materials: PF 200 Polyester Fabric

- a. PF 206 – 6”
- b. PF 212 – 12”

## F. Skylight Sealer

1. Progressive Materials: Pro-Seal HS 3220 Clear Silicone Skylight Coating

## G. Acrylic Coating

1. Progressive Materials: Pro-Hydro AC 1200 Acrylic Roof Coating

**2.02 Acrylic Coating Materials**

## A. Approved roof coating is Pro-Hydro AC 1200 Acrylic Roof Coating, manufactured by Progressive Materials, LLC and complying with the following minimum properties:

1. Tensile Strength: ASTM D-2370 288 ± 50 psi
2. Elongation: ASTM D-2370, 388 percent ± 25.
3. Water Vapor Permeance: ASTM D-1653 14±2 perms
4. Fire resistance:
5. Color: Owner to select standard topcoat color.
6. Solids Content: 53 ± 2
7. VOC Content: < 50 grams/liter
8. Initial Solar Reflectivity: .84 \* White only
9. Initial Thermal Emissivity: .91\* White only
10. SRI Value: 106\*

## **Part 3. Execution**

### **3.01 Examination**

- A. Verify roof slope prior to beginning installation.
  - 1. Standing water areas of any size will adversely affect the performance of any roofing system. Care should be taken during examination to identify any areas of standing water present on the roof 24 or more hours after the latest rain event. In standing water areas where positive drainage does not exist, measures such as lowering drains, installing additional drains, etc. must be taken to ensure positive drainage and eliminate all instances of standing water on the roof. Any section of the roof exposed to standing water after the completion of the Acrylic Roof Coating Restoration project will be excluded from warranty.
- B. Identify all deck failures, flashings failures and inadequate sheet metal details.
- C. Inspect all roof drains to ensure proper performance.
- D. For applications over newly poured concrete, the roof must be fully cured for a minimum of 60 days prior to coating application.

### **3.02 Preparation**

- A. Cleaning
  - 1. Thoroughly power wash roof surface and all other areas to receive new coating with a minimum of 2,000 psi water pressure.
  - 2. After the surface has fully dried, perform an adhesion test. If the coating does not properly adhere to the surface, apply PM P-140 2 part epoxy Primer at a rate of gallon per 150 – 200square feet.
  - 3. Any areas of grease contamination are to be cleaned with industrial strength detergent.
  - 4. Any loose roofing or mastic materials must be removed as the warranty will not cover failure of underlying materials.
- B. Roof Penetration and Flashing Details
  - 1. Ensure all roof penetrations and flashings provide watertight conditions. Re-flash all areas with one of the following methods:
    - a. Install approved flashing grade acrylic sealant in accordance with manufacturer's specifications.
    - b. A three-course coating-fabric-coating by applying one coat of Pro-Hydro AC 1200 at 1.5 gallons per square, laying PF 200 Polyester Fabric into wet coating, then apply another coat of Pro-Hydro AC 1200 1.5 gallons per square.
- C. Sheet Metal
  - 1. Ensure all sheet metal accessories are in good condition and will provide a watertight condition. If necessary, replace or repair any sheet metal required to provide a watertight condition.
- D. Roof Parapets
  - 1. Seal all roof parapet seams with one of the following methods:
    - a. Apply approved flashing grade acrylic sealant onto parapets in accordance with manufacturer's specifications.

- b. A three-course coating-fabric-coating by applying one coat of Pro-Hydro AC 1200 at 1.5 gallons per square, laying PF 200 Polyester Fabric into wet coating, then apply another coat of Pro-Hydro AC 1200 1.5 gallons per square.

- 1) PF 200 Polyester Fabric should extend a minimum of 8" up parapet to ensure proper watertight condition.

#### E. Cracks and Seams

1. For stress cracks smaller than 1/4", apply a heavy coat of approved flashing grade acrylic sealant in the crack and 1" on each side of it. Allow coating to dry for 2-4 hours before installing base coat.
2. For stress cracks or expansion joints larger than 1/4", insert backer rod into the crack. Then, apply a heavy coat of approved flashing grade acrylic sealant over the crack and 1" on each side of it. Ensure the backer rod is completely encapsulated. Allow the flashing grade acrylic sealant to dry for 24 hours prior to installing basecoat.

### 3.03 Acrylic Coating Installation

- A. Ensure surface is completely dry.
- B. Ensure all existing areas of ponding water have been completely remediated to avoid exclusion from warranty.
- C. Ensure subsequent coats of primer or acrylic coating are completely cured.
- D. Ensure adhesion tests have been completed, and results are satisfactory with the manufacturer's requirements.
- E. Note: When installing acrylic coating over newly-poured concrete, the roof must be fully cured for a minimum of 60 days prior to acrylic coating application.
- F. Install acrylic coating in multiple passes over the entire roof surface to achieve a final thickness of:
  1. 25 mils minimum (3 gallons per square) for a 10-year warranty

#### G. NOTES:

1. Care should be taken to ensure proper coverage on all vertical surfaces which could take multiple coats.
2. Passes should be applied perpendicular to each other (crosshatched) and completely cure
3. Any subsequent roof repairs after the coating installation should be performed with a three-course coating and fabric if needed.

### 3.04 Skylight Coating Installation

- A. Skylights should not be coated until after the surrounding roof surface has received Pro-Hydro AC 1200 Acrylic Roof Coating to ensure adequate adhesion to the roof-skylight flashing surface.
  1. The skylight surface must be completely clean, dry, and free of loose particles.
    - a. HS 3220 Pro-Eco Lite Skylight coating should be applied to receive a final dry mil thickness of 30 mils (approximately 2.25 gallons/square). It is advised that HS 3220 be applied in multiple coats to eliminate sag or runoff.

### **3.05 Field Quality Control**

- A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation upon completion and submit report to Owner/Architect. There shall be no items on the roof that could inhibit the inspection process, such as solar panels, deck systems, etc.
  - 1. Notify Owner 48 hours in advance of date and time of inspection.
    - a. Repair or remove and replace components of roofing system where inspection results indicate that they do not comply with specified requirements.

### **3.06 Cleaning**

- A. Remove any overspray from adjacent surfaces using cleaning agents and procedures recommended by manufacturer of affected construction.
- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their instructions.
- C. Repair or replace defaced or disfigured finishes caused by work of this section.

### **3.07 Protection of Finished Work**

- A. Ensure roof surface is free of traffic for minimum of 12 hours after acrylic coating application or until coating is completely cured.
- B. Ensure any subsequent work does not cause damage to finished roof system. If necessary, install protection over finished roof area.

**END OF SECTION**