RECOMMENDED DESIGN SPECIFICATION

SILICONE ROOF COATING RESTORATION (RCR) SYSTEM OVER METAL ROOF PANEL

1 General

1.1 Scope of Work

A. Provide all materials, labor and equipment required for the installation of the RCR system over the metal roof panel including all ancillary products.

1.2 Performance Requirements

A. Conform to applicable code for fire resistance ratings of roof system.

B. Underwriters Laboratories, Inc. UL 790: Class A Fire Hazard Classification.

C. All silicone products must be domestically produced. Products produced outside of the US will not be accepted.

D. Coating manufacturer must produce its own product. Private labeled silicone coating products will not be accepted.

1.3 Submittals

A. Product Data: Product data on silicone coating, physical and chemical properties, preparation of substrate required, product limitations, and cautionary requirements.

B. Shop Drawings: Roof plan and details showing extent of roofing, intersections with adjacent surfaces, details of expansion joints, counterflashing, and other items for a complete roofing system.

C. Manufacturer's Installation Instructions: Indicate installation requirements and procedures.

D. Certificates:
   1. Product certificates signed by the manufacturer certifying material is in compliance with the specified performance characteristics and criteria, and physical requirements.

E. Warranty: For RCR System warranty specified in this Section.

F. Maintenance Data: For RCR System to include in maintenance manuals.

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

1.4 Quality Assurance

A. Manufacturer: Company specializing in the manufacturing of the system specified in this Section.

B. Installer: Firm specializing in performing the work of this Section with a minimum of five (5) years' experience and a minimum of (2) million square feet successfully installed. Installer must be a certified licensed applicator (CLA) by the Manufacturer providing the warranty, and is capable of receiving the specified 10 year roof warranty.

1. Applicator to provide 100% payment & performance bond to owner as required.

2. Applicator to provide a list of at least (3) jobs similar in size, dollar amount and scope, which have been completed within the last (3) years.

3. Applicator to carry a minimum of a (5) million dollar insurance umbrella for their portion of this project.

4. Applicator to ensure all supervising field personal onsite has a 30 hour O.S.H.A. card and all field personnel onsite has a 10 hour O.S.H.A. card at a minimum.

C. Manufacturer Field Representative: Provide qualified representatives of the Manufacturer providing the warranty to monitor and periodically inspect the installation.

1.5 Regulatory Requirements

A. Conform to applicable code for fire resistance ratings of roof assembly.

1.6 Pre-installation Conference

A. Conduct conference at project site, minimum one week prior to beginning Work of this Section. Comply with requirements in Division 1 Section "Preconstruction Conferences."

B. Review installation procedures and coordination required with related work, including manufacturer's written instructions.

1.7 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 batch or lot numbers where appropriate.

C. Store materials indoors whenever possible.

D. Protect stored products from ambient temperatures below 35° F.

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

F. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 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 silicone coating under the following conditions:

1. When ambient temperature is below 40° F.
2. When wind velocity is above 20 mph, unless wind screens are utilized.
3. When raining.
4. At temperature less than 5° F above dew point.

1.9 Warranty

A. Provide Manufacturer's 15 year warranty covering leaks due to silicone material failure.

2 Products

2.1 Acceptable Manufacturers

A. Progressive Materials, LLC – 540 Central Court, New Albany, IN 47150
Ph. (812)944-7803 Fax (812)944-7804

2.2 Silicone Coating Materials

A. Silicone base and top coat to be HS 3200 Series Silicone Coating by Progressive Materials, LLC and complying with the following minimum properties:

1. Tensile Strength: ASTM D412, 247.
2. Elongation: ASTM D412, 237 percent minimum at break at 75 degrees F.
3. Water Vapor Permeance: ASTM D-96, 10.7 at 20 mils.
4. Fire resistance: ASTM E108, UL 790 Class A.
5. Color: Owner to select standard topcoat color.
6. Solids Content: 92% ±3%
7. VOC Content: < 50 grams/liter
8. Initial Solar Reflectivity: .89
9. Initial Thermal Emissivity: .90
10. SRI Value: 113

2.3 Accessories

A. Metal Lap Repair
1. Primer: Quickprime Plus as manufactured by Firestone Building Products
2. Seam Tape: Rubberguard EPDM Quickseam Formflash (9") as manufactured by Firestone Building Products

B. Replacement Fasteners: Fastener one size larger than existing fastener.

C. Walkway Surface:

1. Option 1: Provide an additional coat of silicone coating at a thickness of 15 mils and embed pure white roofing granules into coating while still wet. After the coating has cured, remove all loose granules and outline walkways with a 3" "safety" yellow line to help identify walkways. Walkway surface to be 36" wide. (Alternate colors may be used)

2. Option 2: Install Yellow Spaghetti® walkway pads as manufactured by Greenstreak Group, Inc. Using 100% silicone caulk, install a ½" wide by 12" long bead to the outer edges of each pad with intermittent spacing not to exceed 12". A space of no less than 2" and no more than 6" should be left between each pad.

D. Rust Inhibitor Primer: P130 as manufactured by Progressive Materials, LLC

E. Semi-Translucent Skylight Sealer: HS 3220 Skylight Sealer as manufactured by Progressive Materials, LLC

3 Execution

3.1 Examination

A. Verify roof slope prior to beginning installation. There is to be no standing water on the roof within 48 hours of a rainfall.

B. Identify all seam failures, flashings failures and inadequate sheet metal details.

C. Inspect all roof drains to ensure proper performance.

D. Inspect all roof system fasteners for back out.

3.2 Preparation

A. Metal Panels:

1. Thoroughly powerwash roof surface and all other areas to receive new coating with a minimum of 2,000 psi water pressure.

2. Any areas of grease contamination are to be cleaned with an industrial strength detergent.

3. Replace any structurally unsound metal panels.

4. Any existing roofing or mastic materials must be removed as the warranty will not cover failure of underlying materials.

5. All loose coating and paint must be removed by wire brush, powerwashing or scraper.

6. Prime all rusted areas with P130 Rust Inhibitor Primer at a rate of 1/2 gallon per square.

B. Flashings Details: Ensure all existing flashings provide a watertight condition. If necessary, re-flash any areas required with EPDM Seam Tape. Be certain to prime area with Quickprime prior to installing tape and also reapply primer over EPDM Seam Tape in order to ensure adequate coating adhesion. Apply 20 mils of HS 3200 over EPDM Seam Tape prior to coating the field of the roof.

C. Sheet Metal: 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. Fasteners:

1. Identify and replace all fasteners that are loose or backed out and replace with oversized fastener.

2. Prior to coating the field of the roof, spot apply HS 3200 to all fasteners. Generously apply coating to ensure complete encapsulation of fastener. Application may take 2 coats depending on fastener size.

E. Fiberglass Skylight Panels: Thoroughly clean skylight panels and apply 2 coats (30 mils) of HS 3220 Semi-Translucent Skylight Sealer.

F. Horizontal Laps:

1. Apply pressure to lower lap panel, if more than 1/8" gap appears at lap joint, install additional fasteners.

2. Prime lap joint with Quickprime Plus approximately 12" wide and allow to dry.

3. Install 9" Rubbergard EPDM Formflash overlap joint. Ensure material is centered over the lap joint and primer has been installed at all areas under EPDM. Use a roller to compress EPDM to eliminate any voids or fish mouths.

4. Apply Quickprime over EPDM and allow to dry, then install 20 mils of HS 3200 Silicone Coating prior to coating the field of the roof.

G. Vertical Laps: Ensure all vertical laps are completely tight. If necessary, add additional fasteners and treat fasteners as outlined in 3.2.D.2.

H. Primer: Prime all surfaces as required to ensure proper adhesion with manufacturer's recommended primer. Adhesion tests must be performed prior to installation.

3.3 Silicone Coating Installation

A. Ensure surface is completely clean and dry.

B. Ensure subsequent coats of primer or silicone coating is completely cured.

C. Install base coat of HS 3200 silicone coating at a rate of 12 mils, allow to fully cure and then install 13 mils of HS 3200 topcoat. Total final minimum coating thickness on the field of the roof should be 25 mils (app 2.0 to 2.25 gal/sq.).

1. Application rate could vary depending on application technique, surface texture and wind speeds.

2. Care should be taken to ensure proper coverage of vertical rib surfaces.

D. NOTES:

1. Over some asphalt based or EPDM based products, a slight bleed-through or "yellowing" may occur through the silicone coating. This is only a cosmetic issue and will not affect the performance of the system

2. Any subsequent membrane repairs after the coating installation should be done only with silicone products. Repairs should be completed with a three course coating and fabric if needed.

3.4 Field Quality Control

A. Owner will engage the services of an independent party to periodically inspect roofing installation. Roofing system installer shall cooperate with personnel performing inspections.

B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation upon completion and submit report to Owner/Architect.

1. Notify Architect and Owner 48 hours in advance of date and time of inspection.

C. Repair or remove and replace components of roofing system where inspection results indicate that they do not comply with specified requirements.

3.5 Cleaning

A. Clean work under provisions of Division 1. Remove overspray from adjacent surfaces using cleaning agents and procedures recommended by manufacturer of affected construction.

B. Remove excess silicone coating from finished surfaces.

C. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their instructions.

D. Repair or replace defaced or disfigured finishes caused by work of this section.

3.6 Protection of Finished Work

A. Protect finished work under provisions of Division 1.

B. Ensure roof surface is free of traffic for a minimum of (24) hours after silicone coating application.

END OF SECTION