SECTION 07 00.00

SESCO Si750 SILICONE ROOF RESTORATION SYSTEM FOR METAL ROOFING SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

This section establishes requirements for restoring existing weathered metal roofing systems through the application of a high-solids silicone roof coating system.

The roof restoration system is intended to:

1. Extend the service life of existing roofing assemblies.
2. Protect Metal Roof Panels from ultraviolet degradation.
3. Provide a seamless weather-resistant surface.
4. Improve solar reflectivity and reduce roof surface temperatures.
5. Prevent roof replacement when the existing roof remains structurally sound.

1.2 ROOF ELIGIBILITY

The roof coating system may be installed over:

1. Steel Metal Roofs aged at least one year.
2. Treated Galvanized Steel
3. Anodized Aluminum
4. Pre-Finished Metal.

The system shall not be installed over:

1. Metal with Siliconized or Fluorocarbon Finishes
2. Roofs with pitches less than 2:12
3. Lead Coated Copper
4. Roofs with deflection
5. Roofs with structural deficiencies.

1.3 DESIGN CONSIDERATIONS

The silicone coating system is intended for roofs exhibiting normal weathering and aging. Prior to restoration, the roofing assembly shall be evaluated to verify that:

1. The substrate is dry and stable.
2. Existing membranes remain securely attached.
3. Structural components remain serviceable.
4. Positive drainage is recommended. Roof areas exhibiting chronic standing water shall be reviewed before installation.

1.4 ADHESION VERIFICATION

Representative adhesion testing shall be performed before installation of the roofing system. Testing shall verify compatibility of the existing substrate with all restoration materials. Test results should be a minimum of 2lbs per lineal inch of fabric width.

1.5 RELATED WORK

Coordinate work under this section with:

a) Roof insulation
b) Sheet metal flashings
c) Roof accessories
d) Mechanical curbs
e) Roof drains
f) Equipment supports
g) Penetrations and pipe flashings

1.6 SUBMITTALS

A. **Product Data:**
Submit manufacturer's standard submittal package including specification, installation instructions, and general information for each waterproofing material.

B. **Applicator Qualifications:**
Applicator Qualifications: The applicator shall be approved by SESCO Roofing Products The manufacturer's written verification of applicator approval is required.

C. **Substrate Conditions:**
1. Applicator to present to owner a completed inspection report verifying substrate condition and any noted defects not specifically addressed regarding the installation of the coating.
2. Surface shall be free from loose dirt, stone, debris, moisture, and shall be in stable condition. Any work on the area to receive this application shall be completed prior to the installation of the coating.
3. Applicator shall complete a substrate inspection prior to the start of the installation of the coating. The architect/owner and applicator shall accept the substrate. Start of the work constitutes acceptance.

1.7 QUALIFICATIONS

A. Products shall be supplied by a single manufacturer and designed to function as a complete roof restoration system. Manufacturer shall have been in business for (20) years.

B. Applicators shall have a minimum of five (5) years' experience and 1 million square feet in the application of waterproofing materials of the type specified. The applicator shall possess a current Letter of Good Standing from the specified waterproofing manufacturer.

C. **Mandatory Pre-bid Conference:**
Ten (10) working days prior to the bid opening there is to be a mandatory Pre-Bid Conference. Those not attending the Pre-Bid Conference will not be allowed to bid the project. All products considered equal to the specified product or any changes in the scope of work, installation, or specifications must be presented at the Pre-Bid Conference. If a change in the specifications is accepted, it will be considered as an alternate and will be presented as a bid addendum issued five (5) working days prior to the bid opening. No other changes to the specification or bid documents will be accepted.

D. Materials other than those specified shall be submitted to the architect/owner for approval no later than ten (10) days prior to the bid date. In requesting prior approval, it shall be necessary to submit: 1. A letter of certification, signed by an officer of the manufacturer, stating that the alternate material is equal to or better than the specified product. 2. Independent laboratory test data giving physical property values in comparison to the specified material.

E. **Pre-Installation Conference:** Just prior to the commencement of the installation, meet at the job-site with a representative of the coating manufacturer, Applicator, general contractor, architect, and other

parties affected by this section. Review the methods and procedures, substrate conditions, scheduling, and safety.

1.8 DELIVERY, STORAGE, AND HANDLING

1. Deliver materials in original unopened containers bearing manufacturer identification.
2. Store materials in accordance with published manufacturer requirements.
3. Protect products from freezing temperatures, excessive heat, moisture, and contamination.

1.9 WARRANTY

A. Manufacturer warrants that the material supplied will meet or exceed physical properties as published. The Applicator guarantees that workmanship will be free of defects in coating application. Since performance of previously applied coatings is beyond the control of Manufacturer and Applicator, requests for additional warranty coverage shall be subject to prior approval by Manufacturer.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

ACCEPTABLE MANUFACTURERS- SESCO Roofing Products, SESCOROOF.COM

2.2 MATERIALS

A. **ADHESION PRIMER**
Pr355 General Purpose Primer

B. **FLASHING**
SESCO ROOF Si790 Mastic

C. **POLYESTER MESH**
SESCO POLYESTER REINFORCING MESH

D. **SILICONE ROOF MEMBRANE**
SESCO ROOF Si750 ROOF MEMBRANE

Minimum Physical Properties

Physical Property	Typical Value	Test Method
Solids by Weight	98%	ASTM D 1644
Solids by Volume	96%	ASTM D 2697
Tensile Strength	220 PSI	ASTM D 2370
Elongation	275%	ASTM D 2370
SRI	110	ASTM E1980
VOC	<45 g/l	EPA Method 24
Permeance	6.0 Perms	ASTM E 96

PART 3 - EXECUTION

3.1 EXAMINATION

B. Inspect surfaces that will receive the coating system to make sure they are clean, smooth, sound, properly prepared, and free of moisture, dirt, debris, or other contamination.

C. Verify that all roof penetrations, mechanical equipment, cants, edge metal, and other on-roof items are in place and secure.

D. Verify that all critical areas around the immediate vicinity of the spray area are suitably protected.
E. Verify that all roof drains or leaders are clean and in working order by means of a water test.
F. Verify that all air conditioning and air intake vents are suitably protected or closed.

3.2 SURFACE PREPARATION

Cleaning

A. Inspect all metal roof fasteners and re-tighten where possible. Replace any stripped, missing, corroded, or otherwise defective fasteners, as well as fasteners with deteriorated neoprene washers/grommets, using appropriately sized oversized fasteners to ensure proper attachment and sealing.
B. Inspect all horizontal and vertical panel seams, panel end laps, and tension bars/straps for signs of separation, deterioration, or potential water infiltration. Where required, remove fasteners and carefully separate panel joints to access existing sealants. Remove deteriorated or failed sealant, apply new butyl sealant/caulk, and reassemble the panels. Secure with new fasteners as necessary to achieve a continuous, watertight compression seal and restore weatherproofing integrity.
C. Remove all heavy deposits of dirt, leaves, and other debris from the roof using a stiff broom or air broom. After cleaning, inspect the entire roof surface and all flashings for open seams, tears, cuts, punctures, and any other defects, including damage that may have occurred during the inspection or cleaning process. Repair all identified defects using compatible materials and methods recommended by the manufacturer to prevent water intrusion into the roofing system during cleaning.
D. Clean the surface by power washing using equipment capable of producing a minimum pressure of **3,000 PSI**. Begin rinsing at the highest section of the roof and progress toward the lowest point. Upon completion, inspect the roof and verify that no dirt, debris, or other foreign materials remain on the surface.
E. Cleaning methods shall not damage the existing roofing membrane or inject water into existing system.
F. Areas containing mildew, algae, or fungus shall be treated and cleaned prior to coating.

3.3 Installation

The roofing system shall be installed in accordance with the manufacturer's published requirements and with support from the manufacturer's technical team. Contractors are encouraged to consult Technical Services for guidance on application procedures, substrate conditions, and project-specific recommendations.

1. **REPAIR OF OXIDIZED/ MODERATE SURFACE RUST**

    1. Structurally sound metal roof panels exhibiting moderate to severe oxidation shall be prepared to arrest further corrosion and extend service life. Clean and/or mechanically abrade affected areas as necessary to remove loose rust, scale, dirt, and other surface contaminants while preserving the integrity of the metal substrate. Following surface preparation, apply **Pr355 General Purpose Primer** at a rate of 1 gallon per 200 square feet. Primer application shall provide a stabilized surface and help prevent the continued spread of corrosion prior to the application of any subsequent roof coating or restoration materials.

    2. Remove existing pitch pan compounds, sealants, and termination materials that have failed, deteriorated, or lost adhesion. Replace these components with approved materials suitable for the specific roof condition and detail.

2. **ROOF COATING PREPARATION**

1. **Fasteners:** All fasteners must be re-tightened; all stripped fasteners must be replaced with larger diameter fasteners, and the area re-secured by adding a new fastener next to the one that was stripped. All missing fasteners must be replaced. Encapsulate all fasteners with **Si790 Mastic**.
2. **Horizontal Seams:** Inspect horizontal seams if seams open greater than 1/8" at lap joint install additional stitch fasteners. Choose 1 of the following methods to seal horizontal seam
    i. Apply 4" wide pass of **Si790 Mastic** to all horizontal seams (Min 30 mils DFT)
    ii. Apply a layer of **Si750 High Solids Silicone** into each seam at a rate of 21 dry mils min. coating to extend 2" past edge of fabric, immediately embed polyester mesh 6" minimum into wet coating until mesh is completely saturated. The polyester mesh must be smoothly applied without wrinkles, fish mouths or blisters. Once Fabric is installed per specification apply a minimum of 14 dry mils over polyester mesh to fully encapsulate polyester mesh.
3. **Vertical Seams:** Apply pressure to vertical lap joint, if more than 1/8" gap appears at lap joint, install additional fasteners, and treat fastener as outlined above.
4. **Penetrations:** Apply **Si790 Mastic** around each penetration extending 4" on the vertical and 4" on the horizontal (Min 30 mils DFT)
5. **Rakes:** All fixed rake details on the roof shall be mechanically secured and sealed with a 4" wide application of **Si790 Mastic**. Additional fasteners shall be installed as required prior to application of the urethane detail to ensure a watertight rake condition. (Min 30 mils DFT)

D. **SILICONE MEMBRANE APPLICATION**

a. Apply **Si750 High Solids Silicone** uniformly over prepared roof surfaces.
b. Coverage rate shall be sufficient to achieve a minimum finished dry film thickness as specified to achieve warranty.

LABOR AND MATERIAL WARRANTY TERM	MINIMUM APPLICATION RATE
10 Years	**1.5 Gallons/sq. (24 wmt/21dft)**
15 Years	**1.75 Gallons/sq. (28 wmt/25dft)**
20 Years	**2 Gallons/sq. (32 wmt/28 dft)**

Additional coating shall be applied at transitions, flashings, repairs, granulated surfaces, and other irregular areas as necessary to achieve the specified minimum dry film thickness.

Application shall not occur during precipitation, when moisture is present on the substrate, or when weather conditions may adversely affect curing.

WALKPAD (OPTIONAL)

Where specified install walkpads as manufactured by SESCO Roofing Products

GRANULE SURFACE (OPTIONAL)

Where specified, apply an additional coat of **Si750 High Solids Silicone** at 10 mils and immediately broadcast **SESCO Roofing Granules manufactured by SESCO Roofing Products** at a rate of 30lbs/sq at a uniform rate sufficient to achieve full embedment and consistent appearance. Granules shall be distributed evenly while the coating remains wet.

QUALITY CONTROL INSPECTION

Verify by field measurement that the completed roofing system achieves a minimum dry film thickness as specified, any variations shall be corrected by the applicator.

MINIMUM DRY FILM THICKNESS (DFT) REQUIREMENT: SESCO ROOFING PRODUCTS recommends adding a 10 % variance factor to meet the minimum Dry Film Thickness (DFT) mil requirement to qualify as a warrantable application. It is the Applicator's responsibility to calculate the amount of coating needed to obtain the minimum Dry Film Thickness (DFT) mil thickness.

END OF SECTION 07 00 00.