

Silicone Restoration over Metal

Part 1 – General

1.1 Summary

- A. This specification provides a guide on the installation of a silicone coating restoration over an existing metal roof.
- B. The suitability of the project should be determined by the contractor, and a representative of the owner.
 - a. The existing system should be properly identified, and in sound condition other than requiring a renewal of the metal surface due to normal roof degradation and use.
 - b. Adhesion tests administered by a certified contractor of Marlin Coatings should be performed through various locations and on all different degrees of degradation to ensure the long-term success of the project.
- C. Elements of this specification may not apply to all situations. Such elements may be omitted if not applicable.

1.2 Related Work

- A. Repairs to the following should take place during the project:
 - a. Moisture Survey
 - i. Replace all wet insulation
 - b. Sheet Metal Defects
 - c. Surface Deviations
 - d. Flashing Defects
- B. A certified contractor should provide all labor, materials, equipment, and ancillary products required to install the silicone coating restoration system.

1.3 Requirements

- A. Work must conform to applicable code regarding fire rating of existing roof system.
- B. All Silicone products must conform to Underwriters Laboratories, Inc. – UL 790: Class A Fire Hazard Classification.
- C. All Silicone must be domestically produced. Products outside of the U.S. will not be accepted.
- D. Use of this product over cold storage or cryogenic facilities is not recommended. Silicone has a moderate rate of water transmission, which could lead to the potential for accumulation of moisture in the insulation, deck, or both. Consult Marlin Coatings for recommendations on the use of a vapor barrier system on these types of structures.

1.4 Submittals

- A. Product Data: Submit specification, installation instructions, & general information for each silicone product to be used.

- B. Safety Data Sheets
- C. Applicator should provide a Letter of Good Standing from the silicone supplier.
- D. Sample Warranty
- E. Maintenance Instructions

1.5 Qualifications

- A. Installer:
 - a. Must be a Certified Contractor in good standing with Marlin Coatings.
 - b. Must ensure all personnel working on the project have a full understanding of OSHA safety requirements.
- B. Supplier:
 - a. Primary products should be sourced from a single supplier, while secondary materials may be recommended by the primary supplier.

1.6 Delivery, Storage, & Handling

- A. All material should be stored in the original unopened container, in accordance with the recommendations by the supplier. Ensure to store materials in accordance with city, town, state, and/or federal regulatory agencies.
- B. Silicone products should be stored between 40 - 80 degrees Fahrenheit, and indoors when possible.
- C. Solvent based materials should be stored & disposed of according to local regulations.
- D. Adequate ventilation and protective equipment should be provided to protect from hazardous fumes.
- E. Overspray protection should be used when spraying silicone products.

1.7 Environmental Conditions

- A. Weather Limitations: Technical Data sheets for each silicone product should be consulted to ensure proper installation during acceptable weather conditions.
 - a. Do not install silicone below temperatures of 35 degrees Fahrenheit, or if the dew point is less than 5 degrees above the ambient temperature.

1.8 Warranty

- A. A labor & material warranty (5-, 10-, 15- or 20-year term) shall be provided to the building owner by Marlin Coatings.

Part 2 – Products

2.1 Materials

- A. Insulation board matching existing material.
- B. Marlin Coatings: Polyester Reinforcing Fabric
 - a. Three course method using Polyester Reinforcing Fabric should be done by applying a 15 mil basecoat, embedding fabric into the coating, and applying a 15 mil

intermediate coat. Once the coating develops a “skin”, an additional 15 mils should be applied to ensure complete encapsulation of the fabric.

- C. Fleece Backed Butyl Reinforcing Tape
- D. Marlin Coatings: Rust Inhibiting Primer
- E. Marlin Coatings: Silicone Flashing Grade
- F. Marlin Coatings: Silicone Topcoat – Spray Grade or Roller Grade having the following physical properties:

Silicone Topcoat - Roller Grade		
Property	Value	Test Method
Tensile Strength	350 psi	ASTM D-412
Elongation	174 %	ASTM D-412
Solids by Volume	95 (±3) %	ASTM D-2369
VOC	<50g/L	EPA Method 24
Reflectance	.89 initial	ASTM C-1549
Water Vapor Permeability	10.7 perms	ASTM E-96

- G. Ancillary Products provided by Marlin Coatings:
 - a. Walkway Coatings & Granules
 - b. Translucent Skylight Coatings
 - c. Silicone-based Ponding Eliminator

Part 3 – Execution

3.1 Examination

- A. Identify and repair to any structural, deck, flashing, vents, ducts, gutters, penetrations, sheet metal or parapet wall components should be completed.
- B. Ensure all drains are in proper working condition.
- C. Verify that there are no areas of “ponding water” on the roof. Ponding water being defined as an area of standing water holding more than ½” of water, greater than 100sq.ft., 24 hours after rainfall.

3.2 Preparation

- A. Clean the roof surface by first removing any heavy dirt deposits. Thoroughly power wash the areas to receive coating with a minimum of 2,000 psi of water pressure, removing dirt and loose particulates. Allow time for the roof to dry completely.
- B. Perform an adhesion test to ensure proper adhesion.
 - a. If adhesion issues arise, consult Marlin Coatings Technical Department for solutions.
- C. Any loose roofing material should be removed/repared as underlying material failure is not covered under warranty.

- D. Roof flashings and penetrations should be treated using Silicone Flashing Grade, or Fleece Backed Butyl Reinforcing Tape and Silicone Top Coat.
 - a. Apply 25 mils of coating over the Fleece Backed Butyl Reinforcing Tape to ensure complete encapsulation.
- E. End Laps (Horizontal Seams) - Any area with more than a 1/8" gap when pressing on the lower panel should receive a metal stitch fastener.
 - a. End laps should be treated with one of the following methods:
 - i. A minimum of 25 mils of Silicone Flashing Grade
 - ii. Fleece Backed Butyl Reinforcing Tape
 - iii. Three course utilizing Polyester Fleece
- F. Side Laps (Vertical Seams) – Any area with more than a 1/8" gap when pressing on the lower panel should receive a metal stitch fastener.
- G. Fasteners – Any loose fasteners should be removed and replaced using an oversized fastener. Encapsulate all fasteners using either Silicone Flashing Grade or Silicone Top Coat.

3.3 Silicone Top Coat Installation

- A. Before installation of Silicone Top Coat, verify that all previous applications of primer and silicone base coat have fully cured and that the area to be coated has a completely dry roof surface.
- B. Silicone Top Coat should be applied to the entirety of the surface. Thickness of the coating will be determined by the warranty term requested. Up to date thickness requirements can be found at Marlinroofcoatings.com.

Note: Depending on the slope of the roof, multiple passes may be required to avoid sagging.

- C. Vertical surfaces should be treated with care, as multiple coats will be required to avoid sagging. Avoid applying more than 12 wet mils in one coat on vertical surface.
- D. Equipment curbs must be coated up to the bottom of the metal cap of the unit and sealed underneath using Silicone Top Coat or Silicone Flashing Grade.
- E. Equipment placed on sleepers must be lifted so that the membrane underneath can be treated. Ensure to clean and prep these areas as done so with the field of the roof. An approved slip sheet should be used under the sleepers to protect the roof coating. Any areas that are not properly coated will be excluded from the warranty.

3.4 Walkways

- A. Walkway paths should be installed according to the direction of the building owner. A minimum of a 30" wide path should be used.
- B. Ensure to mask off the edges of the walkway during application to provide clean, straight edges.

- C. For areas requiring impact resistance, broadcast yellow walkway granules at a rate of 60lbs/square into 40 mil thickness of walkway coating. All other areas should receive walkway granules at a rate of 40lbs/square broadcast into 25 mil thickness of walkway coating.

3.5 Field Quality Control

- A. If a labor & material warranty is requested, then after the completion of the project a final inspection must be requested. There are to be no items on the roof that would inhibit a complete and thorough inspection of the entirety of the roof coating project. Items that could inhibit the inspection process, but not limited to, are solar panels & decking systems.
- B. Any components of the roofing system that are not compliant to this specification must be removed, replaced, or corrected by the applicator.
- C. There should be no traffic on the roof system for 24 hours after the completion of the project to ensure enough time for the coating to fully cure.
- D. Damage to the roof surface by other trades shall not be the responsibility of the certified contractor.