PART 1 – GENERAL

1.1 DESCRIPTION

A. This specification outlines the installation of the Inland Silicone Roof Coating Restoration System for aged thermoplastic membranes, including TPO and PVC. It is intended for use on mechanically attached or fully adhered systems only and is not applicable to ballasted roof systems. Included are product descriptions, application procedures, and site condition requirements.

B. This document provides a comprehensive overview of typical conditions encountered on thermoplastic roof systems. It may not cover all project-specific scenarios. For unique or complex conditions, consult the Inland Technical Department. It is the responsibility of the building owner or their designated representative to determine the suitability of this guideline for a particular project.

1.2 SCOPE OF WORK

A. The contractor shall supply all necessary labor, materials, equipment, and tools required to prepare and complete the installation using new materials as specified. All workmanship must adhere to the manufacturer's recommendations and comply with recognized industry standards.

1.3 SUBSTRATE CONDITIONS

A. The performance of the Inland Silicone Roof Coating Restoration is dependent on the condition of the existing roofing substrate. The substrate must be evaluated and verified by a qualified representative of the owner, who has expertise with similar low-slope roofing system and products.

B. The existing roofing system must be sound, watertight, free from material or structural defects, and it must have been installed according to the original manufacturer’s published specifications or in accordance with recognized industry standards. If deficiencies are identified, they must be corrected to meet the required standards.

C. Moisture Survey: A moisture survey is required to ensure the insulation is dry and free from any signs of moisture. Third-party services are strongly recommended.

D. This specification does not apply to loose-laid, ballasted, or previously coated single-ply roofing systems.

E. Inland products are not recommended for application over brittle or friable membranes.

F. The existing roofing system must provide positive drainage to prevent the accumulation of ponding water.

G. The substrate must be free of debris and contaminants that will interfere with adhesion.

H. Adhesion Test: It is strongly advised to perform adhesion tests prior to bidding to determine if a primer or other specific surface preparation is needed. Documentation confirming a successful adhesion test is mandatory for all system warranties. An approved adhesion test must demonstrate a minimum pull strength of 2 pounds per linear inch (PLI) of a fabric, with failure occurring cohesively within the coating or within the substrate itself.

1.4 QUALITY ASSURANCE

A. Contractor Qualification: The contractor should be adequately trained, possess comprehensive roofing knowledge, and have a proven track record of successfully completing projects of similar size and scope.
B. Prior to installation, thoroughly review all Technical Data Sheets and specifications to ensure a comprehensive understanding of all details and requirements.
C. The contractor shall record the overall weather conditions daily, including roof surface temperature, ambient air temperature, relative humidity, dew point, wind velocity, and production locations.

1.5 DELIVERY, STORAGE & HANDLING

A. Deliver only approved materials to the job site, ensuring all containers have unbroken seals and legible, intact labels.
B. Materials shall be delivered in sufficient quantities to avoid work delays.
C. Store and handle materials in a manner that prevents contamination. Keep materials in a dry, well-ventilated, weather-tight area with temperatures ranging from 45°F to 95°F. Protect materials from direct sunlight by keeping them covered. Avoid stacking material pallets and limit the unnecessary placement of stockpiled materials on the existing roof. Ensure that all storage and handling practices comply with the manufacturer's guidelines and applicable regulatory requirements. When possible, store materials indoors.
D. The owner's representative shall reject any damaged materials or materials that do not meet specific requirements. Rejected materials must be promptly removed from the job site and replaced.
E. Record and preserve lot numbers.

1.6 JOBSITE CONDITIONS

A. The contractor shall be responsible for examining site conditions prior to application of all materials. The contractor shall immediately report any unsatisfactory conditions to the owner's representative and not begin any work until conditions have been addressed.
B. Investigate and correct all leaks before proceeding with the new silicone roof coating restoration.
C. No coating products or accessories are to be applied over wet substrates or insulation. All wet roofing materials are to be removed and replaced.
D. Proceed with roofing work only when existing and forecasted weather conditions permit work to be performed in accordance with manufacturer's requirements as follows:
    1. Do not begin work if rain is expected within six hours of application. It is not advisable to apply this product if there is a likelihood of rain or dew occurring before it has dried.
    2. Do not begin work if surface temperature is above 130°F or below 50°F, or when the dew point is less than 5°F above the surface temperature.
    3. Do not start work if there is a possibility that temperatures could drop below 40°F within 24 hours after application.
    4. No moisture, dirt, oil or other contaminants can be present when applying products.
    5. Do not atomize coating when wind velocity is above 15 miles per hour.
    6. The drying time varies based on temperature, humidity and application rate.

1.7 PRECAUTIONS

A. All rooftop HVAC units, vents, or blowers must be disconnected or modified appropriately to prevent water or condensation from contaminating roof surfaces and to prevent fumes from entering the building.
B. The contractor is responsible for safeguarding all nearby surfaces from overspray, brushing, or rolling of the coatings. Wind screens can be used to reduce the wind drift of the coating. Special care is required during spraying, particularly around vehicles. Items that cannot be relocated must be covered and protected.
C. Ensure that work areas remain clean and safe throughout the coating installation process. Remove excess materials, trash, and debris from the job site daily.
D. Comply with OSHA guidelines and implement appropriate safety measures at all times.
E. Confirm that all roofing materials, coating products, and installation methods comply with applicable local, state, and federal building codes, including fire safety standards and insurance requirements.

1.8 WARRANTIES

A. Inland warrants that the supplied material will meet or exceed the published physical properties.
B. Extended warranties are available upon request. The owner is responsible for reviewing and accepting the terms of all extended warranties.
C. All necessary forms, documents, applicable warranty fees and inspections (if required) must be completed before extended warranties can be issued.
D. Applications for systems warranties must be submitted before the project begins.
E. The contractor must provide the Inland Technical Department with at least two (2) weeks' notice to schedule onsite technical support or inspections.
F. System warranties apply only to full-roof areas. Prior approval from the Inland Technical Department is required for system warranties that cover sections of roof areas.
G. Edge metal, wall panels, gutters and rain-carrying components are excluded from warranty coverage.
H. System warranties are not available for residential projects.

PART 2 – PRODUCTS

2.1 DESCRIPTION

A. The components of the Inland Silicone Roof Coating Restoration shall be manufactured or supplied by Inland Coatings, Inc.
B. Components not manufactured or supplied by Inland Coatings, Inc. may be reviewed and accepted at the discretion of the Inland Technical Department. Inland does not warrant or guarantee their performance or suitability.

2.2 MATERIALS

A. **Silicone Coating** – high-yield, low-VOC, one-part silicone elastomeric coating.
   1. AldoSil 397

B. **Silicone Mastic** – silicone elastomeric mastic used for sealing fasteners, laps/seams, penetrations and other details work.
   1. AldoSil 399
C. **Accessories**
   1. Butyl Seam Tape – high-performance butyl adhesive tape with a fabric backing.
   2. T272 Fabric – a soft, easily conformable, stitch-bonded polyester fabric.
   3. IN-Slope Ponding Water Eliminator – a lightweight roof-sloping compound.
   4. Universal Curb Kit – a versatile roof penetration sealing system.
D. **Primer**
   1. AldoPrime TPO – a VOC compliant, solvent-based primer to help improve adhesion.

2.3 EQUIPMENT

A. Silicone roof coatings are most effectively applied using airless spray systems. When selecting the appropriate equipment, several factors must be considered. Inland recommends consulting Graco, Titan Tool, or an equipment specialist to determine the best solution for your specific project requirements.
B. Additional equipment includes long nap, non-shedding, rollers and brushes resistant to solvents, a pressure washer and various common hand and power tools.

PART 3 – EXECUTION

3.1 EXAMINATION

A. A thorough inspection of the entire roof area designated for the new silicone roof coating must be conducted. The installation of any Inland products shall not proceed until all unsatisfactory conditions are addressed and rectified in a manner acceptable to Inland.

3.2 EXISTING CONDITIONS

A. Any defects or leaks in the existing TPO roof system should be repaired using methods approved by the original manufacturer or in accordance with published industry standards. For guidance, refer to *The NRCA Repair Manual for Low-slope Membrane Roof Systems, 2nd Edition*. The Inland Technical Department is also available for assistance. Any issues with the existing substrate that adversely affect the silicone roof coating restoration are not covered under the warranty
B. All wet insulation and roofing materials must be removed and replaced before the application of the coating.
C. It is strongly recommended to remove all abandoned or non-functional equipment from the roof surface.
D. The contactor shall make every effort to eliminate all ponding water areas on the roof prior to the application of Inland products. Ponding water is water that remains on the roof surface for more than 48 hours under conditions that would normally allow for drying.

3.3 SURFACE PREPARATION

A. Verify local building regulations regarding the proper disposal of rinse water, as many areas prohibit discharge into sewer systems or water containment areas.
B. Thoroughly clean the substrate to eliminate dirt, dust, debris, algae growth, and any remnants of previous paint or coatings that may impede the coating process. It may be necessary to use a stiff bristle broom or mechanical scrubber to loosen contaminants. A pressure washer with a minimum working pressure of 3,000 psi and clean water, must be used.
C. A biodegradable detergent may be used to improve cleaning and surface preparation prior to coating application; however, compatibility with the existing roof material should be verified with the material manufacturer before use.
D. Rinse the surface with clean water until all traces of cleaning agents and contaminants are removed to avoid adhesion failures.
E. A clean white rag should show no visible residue when wiped across the surface.
F. Multiple cleaning applications may be necessary.
G. Care should be taken to avoid damaging the existing roof or worsening any existing leak situations during the pressure washing process.
H. The roof surface must be allowed to dry completely before proceeding to the next step.

3.4 SLEEPERS

A. Units resting on wood blocking, sleepers, or directly on the roof surface must be lifted to allow for proper cleaning, priming, and coating of the membrane beneath.
B. Once the coating has fully dried, an approved slip sheet may be used, if deemed necessary by the Contractor, to protect the coated surface. Do not install slip sheets into wet or uncured coating.

3.5 PRIMER APPLICATION

A. Apply AldoPrime TPO to all TPO surfaces at a rate of approximately 500 square feet per gallon. Application rates will vary tremendously depending on application type and sheet porosity.
B. Do not overapply the product, as excessive application may negatively impact adhesion.

3.6 SEAM SEALING (CHOOSE 1 METHOD)

A. Apply silicone mastic, at least 4 inches wide, centered over the seam, at a minimum thickness of 1/16 inch (63 wet mils). Shape the mastic with a central crest and gradually taper the edges outward.
B. Three-Course Method
    1. Apply silicone coating, at least 6 inches wide, centered over the seam, with a minimum thickness of 24 wet mils.
    2. Immediately embed a 4-inch strip of fabric into the wet coating, ensuring it is centered over the seam. Use a dry brush to work the fabric into the coating until fully saturated. The fabric must be smooth, free of wrinkles and blisters.
    3. Allow coating to dry to the touch.

4. Apply a second layer of silicone coating at 24 wet mils to fully encapsulate the fabric.

C. For fully adhered systems only, apply silicone coating, at least 4 inches wide, centered over the seam, with a minimum thickness of 32 wet mils. This must be completed as a separate step and not as part of the general coating application.

3.7 FLASHING & PENETRATION SEALING (CHOOSE 1 METHOD)

Encapsulate all flashing edges, including but not limited to pitch pans, pipe boots, pre-fabricated accessories, field-fabricated flashings and patches, and scuppers.

A. Apply silicone mastic at least 4 inches wide, centered over the seam, at a minimum thickness of 1/8 inch (125 wet mils). Shape the mastic with a central crest and gradually taper the edges outward.

B. Three-Course Method – Coating | Fabric | Coating
   1. Apply silicone coating at least 6 inches wide, centered over the seam, at a minimum thickness of 24 wet mils.
   2. Immediately embed a 4-inch strip of fabric into the wet coating, ensuring it is centered over the seam. Use a dry brush to work the fabric into the coating until fully saturated. The fabric must be smooth, free of wrinkles and air pockets.
   3. Allow coating to dry to the touch.

C. Apply a second layer of silicone coating at 24 wet mils to fully encapsulate the fabric.
   Three-Course Method – Mastic | Fabric | Mastic
   1. Apply silicone mastic at least 6 inches wide, centered over the seam, at a minimum thickness of 1/16 inch (63 wet mils). Shape the mastic with a central crest and gradually taper the edges outward.
   2. Immediately embed a 4-inch strip of fabric into the wet mastic, ensuring it is centered over the seam. Use a dry brush to work the fabric into the coating until fully saturated. The fabric must be smooth, free of wrinkles and air pockets.
   3. Allow mastic to dry to the touch.
   4. Apply a second layer of silicone mastic at 1/16 inch (63 wet mils) to fully encapsulate the fabric.

3.8 DRAINS

A. Remove the existing drain ring and associated hardware.

B. Apply a layer of silicone mastic, 1/4” thick (250 wet mils), to the area where the drain ring sits. Reinstall the drain ring and all related hardware.

C. Apply a bead of silicone mastic at the rear of the drain ring and feather it out smoothly to maintain positive water drainage. While applying the silicone coating, ensure it is applied directly over the feathered mastic, extending slightly onto the drain ring.

D. Coat the exposed membrane inside the drain ring, taking care to prevent the coating from entering the drain pipe.

E. Replace any missing, broken, or damaged drain baskets to ensure proper functionality.

3.9 EXISTING TERMINATIONS

A. Existing sheet metal must be protected and shall not be coated or incorporated into the silicone roofing system.

B. For exposed termination bars, remove the existing sealant and replace it with silicone sealant, or cover it with new counter flashing.
C. Do not apply coating to exposed masonry or brick.

3.10 VERTICAL FLASHINGS

A. All exposed vertical flashings shall be fully coated with silicone.
B. Apply multiple coats as needed to achieve proper coverage, ensuring the coating is applied in a manner that prevents sagging.

3.11 FIELD COAT APPLICATION

A. Before applying the coating, ensure that all preparations have dried adequately, and that all surfaces intended for the silicone roof coating are clean, free of contaminants, and thoroughly dry from water and moisture.
B. Utilize a wet film gauge throughout the installation process to ensure accurate application rates.
C. Single-pass applications are acceptable where appropriate.
D. Silicone coatings cure by reacting with moisture in the air. Typical dry time between coats is 2 to 8 hours, depending on temperature, humidity, and film thickness.
E. **10-YEAR WARRANTY REQUIREMENT**
   1. Apply silicone coating at a rate of 1.5 gallons per 100 square feet (24 wet mils).
   2. Minimum dry film thickness shall be 22 mils.
F. **15-YEAR WARRANTY REQUIREMENT**
   1. Apply silicone coating at a rate of 2 gallons per 100 square feet (32 wet mils).
   2. Minimum dry film thickness shall be 30 mils.
G. **20-YEAR WARRANTY REQUIREMENT**
   1. Apply silicone coating at a rate of 2.5 gallons per 100 square feet (40 wet mils).
   2. Minimum dry film thickness shall be 37 mils.
H. Published minimums do not account for application methods, material waste, environmental conditions, or variations in the existing roof system. Dry Film Thickness (DFT) requirements represent a minimum, not average.

3.12 PONDING WATER & WATERWAYS

A. Apply an additional 16 wet mils of silicone coating to all areas where ponding water is present or likely to occur, including waterways and low-lying sections. Extend this supplemental application at least 12 inches beyond the affected area.
B. This application is in addition to the specified field coating rate and may be applied as part of the final pass or as a separate coat, depending on field conditions.

3.13 WALKWAYS (OPTIONAL)

A. After the original application of coating has fully cured.
B. Mark out walkway paths using masking or painter's tape to create clean, straight lines. Walkways should be a minimum of 36 inches wide.
C. Apply coating at a rate of 1.5 gallons (24 wet mils) per 100 square feet.
D. Immediately broadcast granules evenly into wet coating.

E. Remove tape before the coating dries.
F. After the coating has dried, vacuum loose granules from the roof surface.
G. Walkways are maintenance items and are not included in the warranty coverage.

3.14 FIELD QUALITY CONTROL

A. Allow at least 24 hours for the surface to dry before inspecting for inadequate coverage, holidays, flaws, or defects. Any identified issues should be promptly corrected following cleaning.
B. Restrict foot traffic on newly applied silicone until coating has fully cured. Mark coated sections with safety tape or signage to prevent unintentional damage.
C. Protect roof coating from damage by other trades.

3.15 CLEAN UP

A. All pails, containers, equipment, protective coverings, and any other items brought on site by the contractor must be removed from the site and disposed of properly, following all federal, state, and local regulations.