PART 1 – GENERAL

1.1 DESCRIPTION

A. This specification outlines the installation process for the Inland Silicone/Polyurethane Roof Coating Restoration, intended for waterproofing and restoring cured structural concrete substrates. It includes product descriptions, application methods, and required site conditions.

B. This document provides a comprehensive overview of typical conditions encountered on concrete substrates. 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/Polyurethane 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 systems 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. Inland products are not recommended for application over brittle or friable membranes.

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

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

G. 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/polyurethane 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. Avoid application when freezing temperatures, rain, high humidity, dew, or condensation are expected within 8-hours after application, as the conditions may interfere with proper curing.
    2. Do not begin work if surface temperature is above 130°F or below 50°F, or when the ambient temperature is within 5°F of the dew point.
    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/Polyurethane 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**
   1. AldoSil 397F – a high-yield, low-VOC, one-part silicone elastomeric coating.
B. **Polyurethane Coatings**
   1. AldoThane 384 – a high-solids, single-component, moisture-cure, aromatic polyurethane elastomeric base coat.
C. **Polyurethane Mastic** – a high-solids, single-component, moisture-cure, polyurethane elastomeric mastic designed for sealing fasteners, laps/seams, penetrations and other detail work.
   1. AldoThane 385
D. **Accessories**
   1. T272 Fabric – a soft, easily conformable, stitch-bonded polyester fabric.

2. IN-Slope Ponding Water Eliminator – a lightweight roof-sloping compound.
3. Universal Curb Kit – a versatile roof penetration sealing system.

2.3 EQUIPMENT

A. Silicone and polyurethane roof coatings are most effectively applied using airless spray systems. When selecting the appropriate equipment, several factors must be considered. Inland recommends consulting Titan Tool or an equipment specialist to determine the best solution for your specific project requirements.
B. Additional equipment includes long nap, lint-free, 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/polyurethane 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. All defects in the existing concrete substrate, including cracks, spalling, control joints, and expansion joints, must be properly repaired prior to coating. Repairs should follow the methods outlined in the original project specifications or be performed in accordance with industry standards such as those published by the International Concrete Repair Institute (ICRI). For project specific guidance, contact the Inland Technical Department. Substrate deficiencies that compromise the performance of the silicone/polyurethane roof coating system are not covered under the warranty.
B. All existing patching materials must be completely removed prior to coating.
C. Prepare the concrete surface to achieve the required profile for proper adhesion. Use mechanical grinding, scarifying, or other appropriate methods as needed.
D. It is strongly recommended to remove all abandoned or non-functional equipment from the roof surface.
E. The contractor 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.
F. New concrete must be allowed to cure for a minimum of 28 days under normal conditions. Additional cure time may be required depending on mix design, site conditions, and moisture levels. Verify that the surface is fully cured and dry before coating. Conduct moisture testing if necessary to confirm suitability.

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. Cleaning agents should only be used by experienced personnel, as complete removal is challenging on textured surfaces. Residual cleaner can accumulate in surface crenulations and irregularities, potentially interfering with coating adhesion and long-term performance.
D. Multiple cleaning applications may be necessary.
E. Care should be taken to avoid damaging the existing roof or worsening any existing leak situations during the pressure washing process.
F. Rinse all surfaces thoroughly with clean water until all residues are removed and the rinse water runs clear.
G. If the concrete surface is cleaned using pressure washing or any method that introduces significant moisture, allow additional drying time until the substrate is fully dry prior to coating. Conduct moisture testing as needed to confirm that residual moisture will not interfere with coating adhesion or performance.
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. After the coating has fully dried, install an approved slip sheet to protect the surface. Do not place the slip sheet into wet or uncured coating.

3.5 CRACKS, JOINTS, AND PRIOR REPAIRS

A. All control joints, expansion joints, cracks, and any other surface defects, whether intact or previously repaired, must be detailed using a three-course method consisting of a base coat, reinforcing fabric, and a top coat. Reinforcement shall extend a minimum of 3 inches on either side of the joint or crack.

3.6 FLASHING & PENETRATION SEALING (CHOOSE 1 METHOD)

All flashing transitions and penetrations shall be detailed using a three-course method consisting of a base coat, reinforcing fabric, and a top coat.

A. Three-Course Method – Coating | Fabric | Coating
    1. Apply polyurethane 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.
    4. Apply a second layer of polyurethane coating at 24 wet mils to fully encapsulate the fabric.
B. Three-Course Method – Mastic | Fabric | Mastic
    1. Apply polyurethane 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 polyurethane mastic at 1/16 inch (63 wet mils) to fully encapsulate the fabric.

C. Penetrations that cannot be sealed using standard flashing methods shall be detailed using the Universal Curb Kit.

3.7 DRAINS

A. Remove the existing drain ring and associated hardware.
B. Apply a layer of polyurethane mastic, 1/4 inch 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 polyurethane mastic at the rear of the drain ring and feather it out smoothly to maintain positive water drainage. While applying the polyurethane 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.

3.8 EXISTING TERMINATIONS

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

3.9 VERTICAL FLASHINGS

A. Establish a clear point of termination at least 8 inches above the roof deck. Use tape or other means to create a clean, straight termination line for visual delineation and finish.
B. Apply multiple coats as needed to achieve proper coverage, ensuring the coating is applied in a manner that prevents sagging.

3.10 FIELD COAT APPLICATION

A. Before applying the coating, ensure all preparation areas have dried adequately (typically 12 to 18 hours, depending on environmental conditions). All surfaces intended for the silicone/polyurethane roof coating must be clean, free of contaminants, and completely dry.
B. Utilize a wet film gauge throughout the installation process to ensure accurate application rates.
C. Polyurethane coatings cure by reacting with moisture in the air. Typical cure time between coats is 12 to 18 hours, depending on temperature, humidity, and film thickness.
D. Silicone coatings cure by reacting with moisture in the air. Typical cure time is 2 to 8 hours, depending on temperature, humidity, and film thickness.
E. **10-YEAR WARRANTY REQUIREMENT**
   1. Apply a two-coat silicone/polyurethane system.
   2. Base Coat: Apply AldoThane 384 coating at a rate of 1.5 gallons per 100 square feet (24 wet mils).

3. Top Coat: Apply AldoSil 397F coating at a rate of 1.0 gallons per 100 square feet (16 wet mils).
4. Minimum dry film thickness shall be 34 mils.

F. **15-YEAR WARRANTY REQUIREMENT**
1. Apply a two-coat silicone/polyurethane system.
2. Base Coat: Apply AldoThane 384 coating at a rate of 1.5 gallons per 100 square feet (24 wet mils).
3. Top Coat: Apply AldoSil 397F coating at a rate of 1.5 gallons per 100 square feet (24 wet mils).
4. Minimum dry film thickness shall be 42 mils.

G. **20-YEAR WARRANTY REQUIREMENT**
1. Apply a two-coat silicone/polyurethane system.
2. Base Coat: Apply AldoThane 384 coating at a rate of 1.5 gallons per 100 square feet (24 wet mils).
3. Top Coat: Apply AldoSil 397F coating at a rate of 2.0 gallons per 100 square feet (32 wet mils).
4. Minimum dry film thickness shall be 50 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.

3.11 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 supplemental to the specified field coating rate and must be applied as a separate coat, depending on field conditions.
C. Products must be allowed to fully cure before exposure to ponding water. It is recommended that any standing water be blown or swept from ponding areas during the first 10 days.

3.12 WALKWAYS (OPTIONAL)

A. Walkway installation may begin only 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.

3.13 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/polyurethane 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.

3.14 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.