

INLAND COATINGS

SILICONE SYSTEM SPECIFICATION FOR SINGLE PLY MEMBRANES

This specification provides a durable Silicone Coating System for restoring single ply membranes that are in structurally sound condition. Including, EPDM, HYPALON, TPO and PVC. It provides very effective waterproofing, sealing seams, fasteners and penetrations. The end product shall be a seamless, elastomeric system protecting the roof against leaks and degradation by the elements. It can be used for fully adhered and mechanically fastened single ply systems.

It provides a white, reflective finish coat that dramatically reduces roof temperatures. This keeps the building cooler and eliminates expansion and contraction related problems.

Note: As Inland's high reflectance systems have a significant cooling effect on roofing surfaces, the building envelope should be evaluated to ensure that the insulation and vapor barrier are adequate to prevent condensation development on interior surfaces.

Part 1. - GENERAL

1.01 DESCRIPTION

- A. Work included: The contractor will provide all labor, materials and tools as required to prepare and complete the installation with new materials as specified. All workmanship shall conform to the material manufacturer's recommendations and accepted industry standards.
- B. The installation to include sealing of roof joints with RC-1850 Silicone Seam Compound, including but not limited to seams, curbs, penetrations and scuppers. All preparatory work will then be encapsulated with RC-1800 Silicone Roof Coating.

1.02 SUBSTRATE CONDITIONS

- A. The pre-existing roofing system must be intact with no material or structural defects. It must be adequately bonded to the substrate and the insulation must be free from moisture. Seams must be well adhered or re-seamed using similar materials. If moisture is suspected, obtain a moisture content survey. Remove and replace moist and inadequately bonded insulation.
- B. This specification does not apply to loose-laid, ballasted or previously coated single ply systems.
- C. All pre-existing roofing must have sufficient slope (at least 1/4" to the foot) to eliminate ponding water.
- D. The substrate must be free of splits, blisters, grease, oils and debris.
- E. It is not recommended that Inland products be applied over brittle or friable membranes. Slight scrim exposure is acceptable.
- F. The Inland system is not intended for use on heavy traffic bearing substrates. If foot traffic is expected, a rooftop walkway system shall be used which is approved by Inland.

1.03 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide primary products, including Inland RC-1800 Silicone Roof Coating and RC-1850 Silicone Seam Compound, etc., by a single manufacturer. Provide secondary products only as recommended and approved by Inland Coatings Corporation.
- B. Contractor Qualifications: A single qualified contractor shall perform all work addressed in this section. On System Warranted projects, the contractor must be trained and certified by Inland Coatings for application of the Single Ply System.
- C. Adhesion Test: Prior to estimating coating restoration project, conduct an adhesion test in accordance with Inland adhesion testing procedures to determine if a primer or other specific surface preparation is required.

1.04 SUBMITTALS

- A. Submit Manufacturer's literature and samples to the Owner or Owner's Representative. Literature on the protective coating, seam compound, reinforcement mesh and other related products shall be submitted for review before work is started. Literature shall show material specifications, physical properties, installation instructions, Manufacturer's estimated application rate for required dry film thickness per warranty requirements and SDS.
- B. Submit a sample copy of the Coating Manufacturer's warranty to meet project specification.

1.05 PRELIMINARY PROJECT REVIEW (System Warranted Projects)

- A. Immediately after contract award, contractor shall submit a complete and accurate Bid Report to the Inland Warranty Department for approval. This should include pages 1 & 2 of the Inland Project Profile report, a copy of the roof drawing and the following pictures with detailed descriptions:
 - 1. Distant shot of entire building.
 - 2. Roof height shot of overall project.
 - 3. Close-up of penetrations, scuppers and drains.
 - 4. Any unusual flashing or problem areas.

1.06 JOB CONDITIONS

- A. Proceed with roofing work only when existing and forecasted weather conditions will 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.
 - 2. Do not begin work if surface temperature is above 130 degrees Fahrenheit or below 40 degrees Fahrenheit, or when the dew point is less than 5 degrees Fahrenheit above the surface temperature.
 - 3. No moisture, dirt, oils or other contaminants can be present when applying products.
 - 4. Do not atomize coating when wind velocity is above 15 m.p.h.

1.07 FIELD QUALITY CONTROL

- A. The overall weather conditions, including roof surface temperature, ambient air temperature, relative humidity, dew point and wind velocity shall be recorded daily by the Contractor on the Project Profile form.
- B. Verification of Coating Thickness: The wet film thickness shall be measured and recorded daily, along with the quantity of product and total square feet applied.

1.08 WARRANTY

Provide Inland Product or System Warranty per the requirement of the Building Owner and/or Architect. In order to obtain any Inland System Warranty, the following conditions apply:

- A. Determination of the appropriateness of the Inland Roofing System for any given roof must be obtained from Inland's Warranty Department prior to offering any Inland System Warranty. Inland will refuse to offer a warranty on any Inland System being installed over an unfit, unsound or inappropriate substrate. A project approval letter must be received from Inland prior to beginning the project.
- B. The Inland Roofing System must be applied to the full area of the roof. A System Warranty will not be issued for installations over a section of any roof unless otherwise approved in advance by the Inland Warranty Department.
- C. All gutters and roof areas which pond water for more than 48 hours after precipitation ceases are excluded from coverage under the Inland Warranty.
- D. All required forms, applicable warranty fees and the completed Warranty Registration Form, signed by the Contractor and Building Owner, must be returned to the Inland Warranty Department no later than 30 days after the completion of the project.
- E. Inspections: A minimum of two (Beginning and Final) inspections, by an approved manufacturer's representative, will be required on all projects requiring a System Warranty. The first to be conducted at the beginning of the project, after all surface preparation is completed and prior to the application of any Inland products. The Final inspection will be conducted at the end of the project, after all product applications are completed.

1.09 PRODUCT HANDLING

- A. Deliver only approved materials to the job site. Deliver materials in original sealed containers with seals unbroken and labels legible and intact.
- B. Store and handle materials in a manner that shall ensure there is no possibility of contamination. Store in a dry, well-ventilated, weather-tight place, at temperatures between 50° F and 90° F. Do not stack material pallets. Do not subject existing roof to unnecessary loading of stockpiled materials. In all cases the storage and handling of materials shall conform to the requirements of the manufacturer and all applicable safety regulatory agencies.
- C. Any damaged materials, or materials not conforming to the specific requirements, shall be rejected by the owner. Rejected materials shall be immediately removed from the job site and replaced at no cost to the owner.

Part 2. – PRODUCTS

2.01 SILICONE ROOF COATINGS

- A. Silicone Roof Coating products physical specifications and minimal performance criteria shall be as follows:
 - 1. RC-1800 Silicone Roof Coating
 - Tack Free Time: 1 – 2 hours
 - Elongation: 500 percent (ASTM D-2370)
 - Tensile Strength: 200 PSI (ASTM D-2370)
 - Solids Content – 90% (ASTM D-2697)
 - Reduction: None
 - 2. RC-1850 Silicone Seam Compound
 - Tack Free Time: 1 – 2 hours
 - Elongation: 230 percent (ASTM D-412)
 - Tensile Strength: 220 PSI (ASTM D-412)
 - Reduction: None
 - Specific Gravity: 1.04
 - Flash Point: 101° F.
 - 3. RPM Series Polyester Mesh
 - A. Stitchbonded polyester mesh for reinforcement of seams and penetrations. Provides high strength and good elongation, while conforming well to irregular surfaces.
 - Tensile Strength: 57.1 PSI (ASTM D1682)
 - Elongation: 61% (ASTM D1682)
 - Mullen Burst: 176 lbs. (ASTM D3786)
 - Trapezoid: 16 lbs. (ASTM D1117)
 - 4. RC 300 Roofing Cleaner/Degreaser
 - A. An alkaline cleaner that is biodegradable and non-flammable, which cleans and degreases various roofing surfaces.

2.01 MANUFACTURER

- A. The following roof coating manufacturers have been approved for the project. No substitutions by secondary, indirect manufacturers will be allowed.
 - 1. Inland Coatings
 - 26259 Hwy 6
 - P.O. Box 247
 - Adel, IA 50003
 - (800) 456-8467
 - www.inlandcoatings.com
- B. Other manufacturers requesting approval must submit acceptable information certifying that they are the direct manufacturer from raw material into the specified product and meet the performance criteria required.

PART 3.0 - INSTALLATION

3.01 SURFACE PREPARATION

- A. Examine substrate to receive new roofing. Do not proceed with installation of the Inland Roofing System until unsatisfactory conditions have been corrected in a manner acceptable to the manufacturer (Inland Coatings).
- B. Contractor shall address the following:
- Treatment of Deteriorated/damaged membrane
 - Treatment of ponding water areas
 - Thorough cleaning
 - Miscellaneous items
- C. Treatment of Deteriorated/Damaged Membrane: Areas that are cracked, torn or buckled must be repaired using similar materials. Wet insulation must be replaced.
- D. Treatment of Ponding Water Areas: Contractor shall make every effort to mechanically eliminate all ponding water areas on the roof prior to application of products ("ponding water" is defined as water which does not properly drain and remains for more than 48 hours after precipitation stops).
- E. Thorough Cleaning: The entire roof surface shall be carefully power washed with an approximate working pressure of 2,000 PSI to remove dirt, chalking or loose materials. Care must be taken to prevent membrane damage and to ensure that water is not forced into the roof system. Power washing will include a strong biodegradable alkaline detergent (Inland RC 300 Cleaner/Degreaser) to improve cleaning and kill any algae or fungus. Surface must be thoroughly rinsed with fresh water and completely dry prior to any product applications.
1. Dilute RC-300 Cleaner/Degreaser at the rate of 1 part RC-300 to 30 parts water. Apply the dilute mixture to all single ply surfaces under low pressure spray at the rate of 400 sq. ft. per gallon. After allowing to sit for a minimum of 20 minutes, rinse thoroughly with fresh water under high pressure (approximately 2000 PSI) to remove solution from the roof.
 2. Heavy deposits of dirt or contamination may require additional cleaning or mechanical scrubbing with a stiff bristle broom or brush.
- F. Air conditioning units, blowers and evaporative coolers shall be disconnected or otherwise modified to prevent contaminating the roof surfaces with water or condensation, and to prevent solvent fumes from entering the building.

3.02 LOOSE SEAMS, FASTENERS AND PENETRATIONS

- A. Fasteners: Coat all fasteners with a liberal amount of RC-1850 Silicone Seam Compound. All fasteners must be totally encapsulated.
- B. Seams: All seam areas that are not tightly bonded or in good condition shall be coated with Inland RC 1850 Silicone Seam Compound and Inland RPM 400 Polyester Mesh. Apply RC-1850 Silicone Seam Compound at a coverage rate of 24 sf/gal. (A 5" wide pattern should yield 58 lft/gal @ 55 mils DFT). The above coverage rates are to be achieved in a two-coat application and are the minimum Dry Film Thickness (DFT) requirements under this specification.
1. The application of RC 1850 should be centered on the seam, overlapping an equal distance on either side of the seam to accommodate the width of the polyester mesh.
 2. Embed RPM 400 Polyester Mesh (4" wide) into the seam compound. Back-brush the RPM 400 polyester using a stiff bristle brush to prevent wrinkling or air pockets under the fabric. Allow seam area to cure a minimum of two hours. A liberal second coat of RC-1850 Silicone Seam Compound is then applied over the RPM 400.
- C. Penetrations and Flashings: Flash all curbs, crickets, rakes, parapet walls, ridgecaps, vent pipes, skylights, etc. with RC-1850 Silicone Seam Compound, then embed RPM 400 Polyester Mesh (4" wide). Cover the RPM 400 mesh with a liberal coat of RC 1850.
- D. Gutters: Apply RC-1850 Silicone Seam Compound and RPM 400 Polyester Mesh to all interior gutter seams. Gutter must be clean and dry before application.

3.03 COATING APPLICATION

- A. Prior to the coating application, all preparation materials shall be allowed to dry sufficiently to prevent damage from spray hoses, foot traffic, etc.
- B. Immediately prior to each application of Inland Silicone Coating, all dust, dirt or other contaminants shall be blown off the roof surfaces. Surface must be clean and dry prior to any coating applications.
- C. The color of the finish coat (The final or last coat to be applied) shall be white.
- D. The entire roof, including interior gutter surfaces, shall receive the following Inland Silicone Roof Coating System:

Use the following application rates when specifying a 10-Year Warranty

- 1. Apply RC-1800 Silicone Roof Coating at a minimum rate of 1.5 gallons (24 wet mils) per 100 sq. ft. Allow a minimum of 12 hours drying time prior to allowing foot traffic or inspection of the roof surface. Inspect for insufficient coverage, defects, flaws or holidays. The minimum dry film thickness shall be twenty (21) mils. (Recommended tip size = 635).

Use the following application rates when specifying a 15-Year Warranty

- 2. Apply RC-1800 Silicone Roof Coating at a minimum rate of 2.0 gallons (32 wet mils) per 100 sq. ft. Allow a minimum of 12 hours drying time prior to allowing foot traffic or inspection of the roof surface. Inspect for insufficient coverage, defects, flaws or holidays. The minimum dry film thickness shall be twenty (28) mils. (Recommended tip size = 635).

3.05 CLEANUP

- A. Maintain work areas in a clean, safe condition at all times during coating installation. Remove excess materials, trash and debris from the job site daily.
- B. At the completion of the project, clean area of any spills and containers and clean up all roofing debris, leaving job site in a clean and orderly condition.