ISP282
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INLAND COATINGS

SYSTEM SPECIFICATION FOR TPO OR HYPALON SINGLE PLY

This specification provides a strong, flexible, synthetic rubber system that is resistant to water, corrosion and weather extremes. It can be used for fully adhered and mechanically fastened single ply TPO and Hypalon 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. The end product shall be a seamless, elastomeric system protecting the roof against leaks and degradation by the elements.

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, including but not limited to seams, penetrations, drains and scuppers. All preparatory work will then be encapsulated with RC 2012-B Rubber Base-Coat and RC 2018 Rubber Top-Coat.

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 TPO or Hypalon systems.

C. All pre-existing roofing must have sufficient slope (at least ¼" 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 2012-B Rubber Base-Coat, RC 2018 Rubber Top-Coat and RC 2250 Rubber Seam Compound, etc., by a single manufacturer which has produced rubber products successfully for not less than ten (10) years. 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.

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 MSDS.

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 contaminates 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 more than two high. 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 RUBBER ROOF COATING

A. Rubber Roof Coating products physical specifications and minimum performance criteria shall be as follows:

1. RC 2012-B Rubber Base-Coat

Drying Time: 1 – 3 hours
Elongation: 400 percent
Tensile Strength: 1500 PSI
Coverage Rates: 50 – 100 sq. ft./gal
Reduction: None
Specific Gravity: 1.00
Flash Point: 101° F.

2. RC 2018 Rubber Top-Coat

Drying Time: 1 – 3 hours
Elongation: 400 percent
Tensile Strength: 1200 PSI
Coverage Rates: 65 – 100 sq. ft./gal
Reduction: None
Specific Gravity: 1.07
Flash Point: 101° F.
Solar Reflectance (white): 80+%

3. RC 2250 Rubber Seam Compound

Elongation: 400 percent
Tensile Strength: 1000 PSI
Reduction: None
Specific Gravity: .94
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. CR 2100 Rubber Skylight Coating

A. Clear, flexible rubber coating that provides excellent adhesion and water resistance for fiberglass skylight panels.

Drying Time: 1 – 3 hours
Elongation: 400 percent (ASTM D-412)
Tensile Strength:1520 PSI (ASTM D-412)
Coverage Rates: 80 – 100 sq. ft/gal
Permeance: .166 perms (ASTM E-96)
Reduction: None
Specific Gravity: .87
Flash Point: 101° F.

5. RC 300 Roofing Cleaner/Degreaser

A. An alkaline cleaner that is biodegradable and non-flammable, which cleans and degreases various roofing surfaces.

6. RST Series Roofing Seam Tape

A. A strong, flexible seam tape for reinforcement of seams and penetrations. Provides good elongation and conforms well to irregular surfaces.

Solid Content (ASTM D1729-69): 99.8%
Tensile Strength (ASTM D-412): 35 PSI
Elongation/webbing: 200%
Cold Temperature Flexibility: Passes
Moisture Vapor Transmission: 0.75 perms

2.02 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 Corporation).

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 mixtures 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 30 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 SEAMS, FASTENERS AND PENETRATIONS (Mandatory on System Warranties) (**Method 1 with RPM Series Polyester mesh**)

A. Fasteners: Coat all fasteners with a liberal amount of RC 2250 Rubber 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 2250 Rubber Seam Compound and Inland RPM 400 Polyester Mesh. Apply RC 2250 Rubber Seam Compound at a coverage rate of 19 sf/gal. (A 5" wide pattern should yield 45 lft/gal @ 45 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 2250 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 2250 Rubber 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 2250 Rubber Seam Compound, then embed RPM 400 Polyester Mesh (4" wide). Cover the RPM 400 mesh with a liberal coat of RC 2250 Rubber seam compound.

C. Skylights: Apply two coats of CR 2100 Rubber Skylight Coating to all fiberglass skylight panels at a rate of 100 sf/gal per coat. This is best accomplished using a roller or brush.

D. Gutters: Apply RC 2250 Rubber Seam Compound and RPM 400 Polyester Mesh to all interior gutter seams. Gutter must be clean and dry before application.

3.03 SEAMS, FASTENERS AND PENETRATIONS (Mandatory on System Warranties) (**Method 2 with RST Series Roofing Seam Tape**)

A. Fasteners: Coat all fasteners with a liberal amount of RC 2250 Rubber Seam Compound. (Brush, Trowel or Spray Grade). All fasteners must be totally encapsulated.

B. Seams: All seam areas that are not tightly bonded or in good condition - apply RST-400 Roofing Seam Tape to the seam area and work into all cracks and crevices to prevent wrinkling or air pockets. Apply a liberal coat of RC-2250 Seam Compound at a coverage rate of 40 s.f./gal. (A 5" wide pattern should yield 90 lft/gal @ 17 mils DFT) The combined minimum Dry Film Thickness (DFT) required under this specification shall be 35 mils.

1. All seaming applications should be centered on the seam, overlapping an equal distance on either side of the seam.

C. Penetrations and Flashings: Flash all curbs, crickets, rakes, parapet walls, ridge caps, vent pipes, pinholes on metal panel, skylights, etc. with RST-400 Seam tape (4" wide). Cover the RST-400 tape with a liberal coat of RC 2250 Rubber seam compound.

D. Skylights: Apply two coats of CR 2100 Rubber Skylight Coating to all fiberglass skylight panels at a rate of 100 sf/gal per coat. This is best accomplished using a roller or brush.

E. Gutters: Apply RST-400 Seam Tape to all interior gutter seams. Cover the RST-400 tape with a liberal coat of RC 2250 Rubber seam compound. Gutter must be clean and dry before application.

3.04 COATING APPLICATION

A. Prior to the application of Inland Rubber Coatings, 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 Rubber Coatings, all dust, dirt or other contaminates 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 Rubber Roof Coating System:

Note: Although Inland Rubber Products provide excellent water resistance, they must be allowed to cure prior to being subjected to ponding water. It is recommended that standing water be blown or swept from any ponding areas for the first 10 days.

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

1. Apply RC 2012-B Rubber Base-Coat at a minimum rate of 1.25 gallons per 100 sq. ft. Allow a minimum of 24 hours dry time and inspect for defects, flaws or holidays. Correct any unsatisfactory conditions prior to proceeding. (Recommended tip size = 631)

2. Apply RC 2018 Rubber Top-Coat at a minimum rate of 1.0 gallons per 100 sq. ft. Allow a minimum of 24 hours drying time prior to allowing foot traffic or inspection of the roof surface. Inspect for insufficient coverage, defects or flaws. Correct any unsatisfactory conditions. The minimum dry film thickness shall be 14 mils. (recommended tip size = 625)

Use the following application rates when specifying a 15-Year Warranty (White Only)

1. Apply RC 2012-B Rubber Base-Coat at a minimum rate of 1.25 gallons per 100 sq. ft. Allow a minimum of 24 hours dry time and inspect for defects, flaws or holidays. Correct any unsatisfactory conditions prior to proceeding. (Recommended tip size = 631)

2. Apply RC 2018 (White Only) Rubber Top-Coat at a minimum rate of 1.5 gallons per 100 sq. ft. Allow a minimum of 24 hours drying time prior to allowing foot traffic or inspection of the roof surface. Inspect for insufficient coverage, defects or flaws. Correct any unsatisfactory conditions. The minimum dry film thickness shall be 17 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.