

This document provides general guidelines for the application of listed materials as furnished by INSTACOAT PREMIUM PRODUCTS (IPP). These general guidelines are NOT intended as project specific specifications and should not be used as such. The information contained herein may be used or modified by the owner, architect, or contractor to prepare specifications for related projects. It is the responsibility of the owner, architect, and/or contractor to ensure that these general guidelines are consistent with the contractual and construction requirements related to the project.

PART 1 - GENERAL

This roofing system follows the Mesh Reinforced Elastomeric Coatings (MREC) process for a roof recover; UFC 3-110-03 Roofing. This liquid application allows the membrane to be form-fitted to the specific roof dynamics across the roofing envelope. The system is a fully bonded elastomeric seamless waterproofing membrane. This system seals the entire deck, creating a “thermal/air barrier”, maintaining the interior building environment; verified with infrared drone inspection. Systems can be designed for each specific roof type and modified for two (2) or three (3) layer systems with mesh reinforcement. No high VOC’s adhesives are used to bond membranes to roofs and liquid applications eliminate concerns of air gaps between the roof deck and membrane. This seamless membrane exhibits the following properties: 800%+ elongation rubber emulsion, No VOC's, self-sealing/healing, waterproof; IPP silicone exceeds Solar Reflectance Index values (SRI), meets/exceeds Sustainability requirements set by EO 14008/14057 and FAR 36.104 Policy.

- 1- Rubberized Asphalt Emulsion—Elastomeric, waterproof membrane, 60-100mils thick
- 2- Primer / Bleed Blocker—Epoxy, waterproof membrane, 16mils thick
- 3- Silicone—Elastomeric, waterproof membrane, UV stable, 40mils thick, exceeds Industry Standards

Note Reinforcement Fabric is embedded in the rubber for all detail work and seams/decks specified. Application process can utilize dual component spray applied or roller brush*

1.1 IPP APPLICATION PROCESS: Used for Mod-Bit, BUR, Metal and approved Single-Ply Membranes.

- A. Mod-Bit, BUR, and Metal: Remove excess aggregates/gravel, debris, and clean the roof deck.
- B. Single-Ply membranes: Remove oxidized top layer using, IPP Wash and Prime cleaner.
- C. Layer one (1): Elastomeric Asphalt Rubber Emulsion.
 - Apply rubber emulsion 80mils thickness and reinforcement fabric to all detail work areas. (Detail work: seams/penetrations/curbing/drains/scuppers/flashing/parapets)
 - Inspection and cure product meeting manufacturers Technical Data Sheet (TDS).
 - Apply rubber emulsion 80mils thickness, full deck encapsulation (*customer selected*).
 - Inspection and cure product meeting manufacturers Technical Data Sheet (TDS).
- D. Layer two (2): Elastomeric primer 16mils thick, applied to detail work areas and roof deck.
 - Inspection and cure product meeting manufacturers Technical Data Sheet (TDS).
- E. Layer three (3): Elastomeric Silicone, UV stable, highly reflective, 40mils thickness
 - Apply 20mils thickness silicone (*color options selected by customer-generally white*).
 - If full MREC is used, the fabric will be installed in the first layer of silicone.
 - Apply 20mils thickness silicone, second coat will meet mil requirements for selected system.

- Inspection and cure product meeting manufacturers Technical Data Sheet (TDS).
- F. Final IPP Inspection with customer and submittal of warranty certification approval documents.

1.2 SUBMITTALS

Prior to installation, the following submittals will be available for review and approval.

1. Technical Data Sheets (TDS)
2. Brochures and samples.
3. Safety Data Sheets (SDS)
4. Manufacturers Installation Instructions
5. Cool roof case studies and past performance projects (20+ years of installed products)
5. Draft Warranty Certificates—Designed for each roof type—Hail Damage Warranty Options
6. Government sustainability requirements for cool roof systems (EPA/DOE/EO/FAR)
7. Third Party product ratings and approvals—CA Title 24, Miami Dade, NSF, CRRC, UL, FM, etc..

1.3 CONTRACTOR QUALIFICATIONS

The contractor will use certified IPP applicators trained by the product manufacturer. Proof of this qualification will be in written form from the manufacturer.

1.4 QUALITY ASSURANCE

- A. Codes and Standards: IPP applicators are familiar with and follow all: codes, regulations, policies, and standards governing the specified work. Third party ratings are required to meet industry roofing standards and government guidelines. IPP products have multiple third party ratings and exceed requirements for Solar Reflectance Index (SRI values).
- B. DOE Energy Star no longer rates any roofing products; the DOE rescinded Energy Star in June 2022. Cool Roof products follow ANSI/CRRC Standard-100 for SRI compliance.
- C. Workmanship: All work shall be installed as indicated, in accordance with manufacturer's instructions, and an IPP certified applicator will be onsite for membrane application.
- D. Deviations: There shall be no deviations from the specification or installation instructions, unless the deviation is approved in writing by the manufacturer and customer approved site specific.
- E. Technical Representative: A manufacturer's certified applicator will be onsite, during the application process. Additionally, an IPP inspector will conduct inspections of the process to ensure compliance. These documented inspections will ensure the final product meets application and warranty requirements.

1.5 DELIVERY, ORDERING, SAFETY, and STORAGE

- A. Delivery: Materials shall be delivered in their original unopened containers, clearly marked. Material shall be stored in clean, dry areas away from direct sun in containers at 50 to 90 degrees Fahrenheit until ready for use.
- B. Ordering: Comply with supplier's ordering instruction and lead-time requirements to avoid construction delays. Do not deliver all material unless storage requirements are available on the site, that meet TDS/SDS storage requirements.
- C. Safety: Refer to all applicable data, including, but not limited to SDS and TDS Sheets, Product Labels, and specific instructions for Personnel Protection Equipment (PPE). The applicator will comply with all Federal, State, and local regulations pertaining to safety, environmental protection, and other site regulations/policies.

IPP Certified Installer/Contractor: will follow the general safety precautions listed below:

1. All work sites should have safety markers/cones/caution tape as needed to prevent pedestrian or vehicular traffic from entering construction zones.
 2. The installer should brief customers on any safety concerns and work with site employees to foster a safe work environment.
 3. Avoid contact with eyes and skin; do not ingest or inhale. Prolonged or repeated exposure may cause skin irritation or allergic reactions. (SDS)
 4. Determine PPE requirements for each application step and wear as needed for protection. (Safety goggles, rubber gloves, and appropriate clothing)
 5. Follow site specific local and agency construction waste disposal policies.
 6. Follow industry standards for construction, roofing, and site-safety protocols.
- D. Storage: Store products onsite out of direct sunlight and within temperature range recommended by the manufacturer. Do not allow freezing to occur in storage or during shipping.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Installation Requirements:

Do not install if:

1. Precipitation is expected within 24 hours after application.
2. Ambient temperatures are below 45° F.
3. Ambient temperature is expected to fall below 32° F within 24 hours of installation.
4. Ambient temperature exceeds 100° F.
5. Substrate temperature exceeds 120° F.

- B. Substrate Requirements:
1. Must be sound, dry substrate free from defects.
 2. Must have positive slope and drain to roof scuppers or drainage systems.
 3. Free from standing or ponding water; remove moisture as needed from low areas.
 4. Free from grease, dirt, or other foreign materials.

1.7 WARRANTY

- A. The manufacturer's limited warranty provided by IPP, warrants specifically against defective materials. If defective materials are found, IPP will provide additional products to re-apply. Specific warranties for labor/workmanship must be provided by installer/contractor or by utilization of a performance bond.
- B. Manufacturer Warranty: The type of warranty will be selected prior to commencement of work, such as "NDL". The applicators apply products specific to warranty selection and IPP will provide inspectors to ensure all specifications are met at each stage of the membrane installation. The installer shall submit manufacturer's "Request for Warranty" and supporting documentation at completion of installation.

PART 2 – PRODUCTS

2.1 PRODUCT MANUFACTURER

Materials are specified by brand name to establish a basis for quality of design and performance requirements and general description of products. These guidelines are written around IPP products, the products specified are a standard of quality required for this project. The IPP product brands can be modified for specific roof types, substrates and application processes to meet owner requirements; contact IPP representatives for more information.

2.2 PRODUCT NAME AND DESCRIPTION

- A. IPP Roofing Spray Grade – Elastomeric Rubberized Asphalt Emulsion, waterproof
- B. IPP Roofing Roller/Brush Grade – Elastomeric Rubberized Asphalt Emulsion, waterproof
- C. IPP Roofing Trowel Grade – Elastomeric Rubberized Asphalt Emulsion, waterproof
- D. IPP Calcium Chloride – Activator/Catalyst. (Used for Dual Component Spray Applications)
- E. IPP Reinforcement Fabric – 100% Polyester non-woven fabric
- F. IPP WBEP-200 – Epoxy primer/bleed blocker, Waterproof
- G. IPP 250HS Silicone – Elastomeric, Highly Reflective, UV Stable, Waterproof, (see: Color Options)

2.3 PRODUCT PERFORMANCE REQUIREMENTS

ASTM International, formerly known as American Society for Testing and Materials (ASTM), provides material testing standards for the roofing industry. IPP test data and verification of material results

are listed on the IPP Technical Data Sheets (TDS). Additionally, test results for third party ratings, certifications, and compliance are also available for IPP products. Examples: ANSI/CRRC Standard 100 (S-100) for SRI values and testing results, formerly Energy Star rated products. Rated products are listed on the Cool Roof Rating Council website.

PART 3 – EXECUTION

3.1 MANUFACTURER’S INSTRUCTIONS

Compliance: Comply with manufacturer’s most recently published TDS, brochures, installation instructions, substrate testing, surface preparation, cleaning, and post installation testing. The strict adherence to application processes by certified applicators and IPP inspectors will garner the applicable warranty for the project.

3.2 PREPARATION

- A. Surface Inspection: Prior to commencement of work, a thorough inspection of the substrate should be carried out to determine or confirm the following:
1. A surface inspection will determine the product selection and application process.
 2. A positive slope and functioning of the roof drainage system to prevent ponding water.
 3. The substrate will be structurally sound prior to any applications.
 4. All rooftop equipment, curbing, penetrations, vents, mounts, parapets, flashing and transitional areas will be inspected to ensure they are structurally sound.
 5. The roof deck inspection will verify framing members, supports, insulation and decking are structurally sound. Any areas in question will be briefed to the owner and project manager.
 6. Deck areas not meeting structural requirements must be repaired prior to applying products.
- B. Roof Preparation:
1. Vacuum, sweep, or wash to remove all loose aggregates/oxidization from the membrane.
 2. All detail work areas, cracks, voids, drains, low areas and seams shall be inspected to ensure no moisture is present. Drying times can be accelerated with the use of roof dryers, or blowers. Follow site specific requirements to install roof dryers on the deck. Moisture must be removed prior to applying products to ensure a proper bond.
 3. Inspection: All preliminary work will be inspected carefully by the applicator to ensure that all areas meet project specifications. These inspections will be documented onsite by certified applicators and recorded by IPP inspectors; this will ensure all roof specific requirements meet warranty guidelines.

3.3 INSTALLATION

- A. One-Way Vents: These vents prolong the life of the roof system by relieving pressure and moisture build-up within the roof deck. The vents allow trapped air pressure or off gassing from

any existing coal tar asphalt to escape, which will help reduce moisture and blistering. Trapped air pressure and moisture can cause a reduction in thermal protection of the insulation and roof membrane system leading to roof deck damage. If vents are needed, they'll be laid out across the roof following manufactures guidelines and encapsulated with rubber emulsion and reinforcement fabric.

- B. Elastomeric Rubber Spray Grade and Roller Brush Grade: Apply rubber to all detail areas and seams across the deck for a total of 80mils dry. If the system selected is full roof encapsulation, the entire deck will be coated with rubber emulsion. All detailed work will have polyester fabric embedded in the rubber and seams will be treated with fabric as needed. Allow 24 hours to cure; cure times may vary depending on temperatures and humidity. Prior to application, ensure areas to be rolled or sprayed are clean and free from debris. Inspect surface conditions for holidays or defects and correct all such conditions prior to proceeding with the next application.
- C. Primer--WBEP-200: Apply primer by roller over the cured rubber membrane 16mils dry. Follow manufactures recommendation for gallons applied per square foot. This membrane acts as a barrier to prevent any bleed through from the old roofing asphalt system. This membrane is protects the rubber membrane, while providing a bonding surface for silicone.
- D. Elastomeric 250HS White Silicone, UV Stable, Highly Reflective: Apply silicone over entire roof deck to meet 40mils dry application using a super spreader and rollers. The spreader will evenly distribute the product and is back rolled to meet mil thickness. Applications will be inspected and measured to ensure thicknesses are met.
- E. Walk-Ways: Customer selects proper walk-way layout for the roof deck. PVC mats can be installed around roof top equipment to provide a slip-free working surface. Silicone roofs are not high traffic surfaces and are slippery, walkways ensure safe walking/working areas, and protect the silicone surface. IPP walkway systems can also provide EPDM ergonomic walkways if requested.

3.4 WASTE AND LANDFILL REDUCTION

Minimizing waste results in less of a burden to landfills. All waste of IPP products will be minimized, recycled, and disposed of properly. Follow regulations of the County, State, Federal and local requirements. IPP membranes can reduce construction waste up to 100%. (EO/FAR)

3.5 CLEANING

- A. Immediately clean any surfaces over-sprayed or rolled, not scheduled to be coated in accordance with manufacturer's instructions.

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- B. After installation conduct a site walk with the installer and clean the surrounding area to ensure a quality final product is provided to the customer.

3.6 POST INSTALLATION INSPECTION AND QUALITY ASSURANCE

- A. It will be the installer's responsibility to perform first line inspection of all aspects of the surface preparation, membrane application, and to ensure conformance with specifications.
- B. Installer shall provide a daily record of all product batch numbers used, application process information: temperatures, relative humidity, dew point, procedures, and inspection data.
- C. Proper application is the responsibility of the certified installers. Site visits by IPP personnel provide technical recommendations only and are not to supervise or provide quality control on the jobsite. The IPP personnel site visits ensure the application processes are followed in accordance with warranty specifications.
- D. UFC 3-110-03 Roofing , Section 6-3.2,"MREC has a wide range of use in re-roofing, repair, and sustainment" and "MREC offers a high return on investment with low risk".
- E. This system qualifies for: US Green Building Council's Leadership in Energy and Environmental Design (LEED), Highly Reflective Low-Slope Roof.
Minimum solar reflectance index (SRI) values:
LEED SRI: Initial-83 and 3-year aged SRI-64
IPP 250HS White Silicone SRI: Initial-113 and 3-year aged-89
- F. Final Inspection results will be submitted with warranty certification request by the IPP inspector and the warranty certificate will be issued to the customer.

END OF SECTION