

**SECTION 7307 CONCRETE/ CLAY TILE, METAL, AND SLATE  
REFLECTIVE INSULATING ROOF UNDERLAYMENT**

**Part 1 – General**

1.01 Summary

A. Section Includes:

1. Reflective insulating roof underlayment.
2. Provide and install underlayment in compliance with manufacturer's specified installation requirements.

B. Related Sections

1. Section 6100: Rough Carpentry; Roof Sheathing and nailers
2. Section 7620: Sheet Metal Flashings and Trim
3. Section: 7311: Asphalt Shingles
4. Section: 7320: Concrete/Clay Roof Tile
5. Section: 7610: Architectural Metal Roofing
6. Section: 7317: Real and Synthetic Slate

C. References

1. ICC/ES ESR 1708 - ACC 188, Roof Underlayments
2. ICC/ES AC08 Concrete Tile Underlayment on Spaced Sheathing
3. Counter Batten System per Kirsch Building Products for Sharkskin Ultra Radiant®
4. Sharkskin Ventilated Roof Mat™ - [www.sharkskinroof.com](http://www.sharkskinroof.com)
5. Miami/Dade NOA No.16-0517.14
6. Florida Building Code (FBC) FL8097-R-5 Code Version 2017
7. 2006 International Building Code (IBC)
8. 2006 International Residential Code (IRC)
9. Texas Department of Insurance
10. National Roofing Contractors Association
11. Western States Roofing Contractors Association

1.02 Performance Requirements

- A. Provide and install reflective insulating roof underlayment and roof flashing system that does not permit the passage of water and will withstand 12-month UV resistance to sun light.
- B. Provide and install a reflective insulating roof underlayment that has passed the requirements set forth in ICC-ES AC188 per third party independent testing.
- C. Provide a reflective insulating roof underlayment that has service temperatures between -50 degrees F and 280 degrees F (-45.55 – 137.77 degrees C).

**SECTION 7307 CONCRETE/ CLAY TILE, METAL, AND SLATE  
REFLECTIVE INSULATING ROOF UNDERLAYMENT**

- D. Provide and install a reflective insulating roof underlayment that is slip-resistant to work over even in wet conditions.
- E. Provide and install a roof underlayment that has passed the testing requirements per Miami-Dade for High Velocity Hurricane Zone with 6-month UV exposure resistance per ASTM D4798 Cycle A-1 for 1000 hrs., per independent testing from a Miami-Dade accredited lab.
- F. Provide and install a roof underlayment that has passed the testing requirements set forth per FBC Code Version 2017 per independent testing
- D. Provide and install a reflective insulating roof underlayment that carries a 50-year limited warranty.
- E. Provide and install a reflective insulating roof underlayment with an emittance of 0.04 or better and reflectance of 96 or better.

1.03 Submittals – must comply with Division 1

- A. Product Data: Provide product data sheets for each type of product indicated in this section, including certified product test results.
- B. Shop Drawings: Provide manufacturers standard installation details, certified product test results as applicable to materials, installation instructions and approved shop drawings for the roof system specified.
- C. Provide samples of roof underlayment and associated fasteners for verification of quality.
- D. Sample Warranty

1.04 Quality Assurance

- A. Manufacturer Qualifications: Manufacturer to have ICC/ES, FBC, Miami/Dade testing listed reports and provide data from independent testing per Slip Resistance; Test Method National Standard of Canada CAN GSB-75.1-M88 or equivalent ASTM test per an approved ICC/ES independent testing company.

**Average Coefficient of Friction**

Rubber – dry: 0.63  
Rubber – wet: 0.51

Leather – dry: 0.48  
Leather – wet: 0.50

**SECTION 7307 CONCRETE/ CLAY TILE, METAL, AND SLATE  
REFLECTIVE INSULATING ROOF UNDERLAYMENT**

- B. The formation or presence of mold or fungi in a building is dependent upon a number of factors including, but not limited to, the presence of spores and nutrient sources, moisture, temperatures, climatic conditions, relative humidity, and heating/ventilating systems and their maintenance and operating capabilities. These factors are beyond the control of Kirsch Building Products LLC (Kirsch) and Kirsch shall not be responsible for any claims, repairs, restoration, or damages relating to the presence of any irritants, contaminants, vapors, fumes, molds, fungi, bacteria, spores, mycotoxins, or the like in any building or in the air, land, or water serving the building.

1.05 Delivery, Storage and Handling

- A. Packing, Shipping, Handling and Unloading: Deliver materials with identification labels intact. Schedule deliveries to avoid construction delays but minimize jobsite storage.
- B. Storage and protection: Store materials protected from exposure to harmful weather conditions and direct sunlight. As recommended by manufacturer, store materials at a temperature between 40 degrees F and 100 degrees (4.4 – 37.8 degrees C). If exposed to lower temperatures restore materials to 40-degree F (4.4 C) minimum temperature before application.

1.06 Warranty

- A. Upon original pre-installation of final roof system, specified underlayment will not materially deteriorate from exposure to sunlight for 12 months.
- B. Upon installation of final roof system, specified underlayment will not allow water to penetrate the roofing substrate due to decomposition beneath the primary roof covering. And provide a 50-year limited warranty per Kirsch Building Products – Sharkskin Ultra Radiant® Limited Warranty.

**Part 2 – Products**

2.01 Materials

- A. Acceptable Product: Sharkskin Ultra Radiant® as manufactured by: Kirsch Building Products LLC, 1464 Madera Road, Suite 387, Simi Valley, CA 93065  
Tel: (877-742-7507 Fax: 805-526-1116  
[www.sharkskinroof.com](http://www.sharkskinroof.com)

**SECTION 7307 CONCRETE/ CLAY TILE, METAL, AND SLATE  
REFLECTIVE INSULATING ROOF UNDERLAYMENT**

- B. Substitutions:
  - a. Substitutions must fully comply with specified requirements
  - b. Refer to section 01630 - Product options and substitutions for substitution request procedures.
  
- C. Physical Properties of Roof Underlayment membrane:  
High tensile strength polypropylene woven core fabric, coated on both sides with UV resistant polypropylene coating containing antioxidant additive, with slip-resistant non-woven fiber surface embedded in top coating layer and reflective insulation layer bonded to the bottom side.

2.02 Materials

- A. Polypropylene based polymer blend.
- B. Reflective insulating composite layer

**Part 3 Execution**

3.01 Examination

- A. Verify that a roof slope of 3:12 or greater exists for proper water shedding.
  
- B. Determine, with the presence of the installer, that conditions are satisfactory. (i.e. remove sharp objects, damaged roof sheathing and debris on roof deck, etc.)
  
- C. Conflicts resulting from inspection should be resolved prior to underlayment installation.

3.02 Installation

Reflective insulating roof underlayment shall be installed per printed instruction from the manufacturer on every roll or per local building code. Overlaps run with the flow of water in a shingle-like manner with slip-resistant printed side up. Install to vertical battens using 3/8" standard galvanized, and or stainless-steel roofing nails, 1" round plastic or metal cap nails, or as per local code. Fastening spacing may vary based upon local code.

- A. Reflective insulating underlayment is laid horizontally parallel to the eave of the roof, with the reflective surface facing down/toward the roof deck and across vertical wood/metal/plastic battens installed over a solid wood deck or across rafters to create an air space below the underlayment. Vertical battens or rafters are spaced 24" O.C maximum

**SECTION 7307 CONCRETE/ CLAY TILE, METAL, AND SLATE  
REFLECTIVE INSULATING ROOF UNDERLAYMENT**

or per Tile Roof Institute (TRI) or per manufactures installation instructions or per local code, with a minimum 4-inch horizontal lap and with a minimum 12"-inch vertical lap with vertical laps breaking over vertical battens/rafters. Do not over drive fasteners as this may damage the underlayment. The reflective insulating underlayment shall be fastened as necessary to hold in place and allow for a safe walk able surface for the installer. Install horizontal wood/metal/plastic batten per tile layout to allow tile fastening to horizontal batter per manufactures installation instructions.

- B. Fasten horizontal batten through Sharkskin Ultra Radian® at vertical battens and into plywood/OSB roof deck per code. Use nails or screws, per local wind uplift and fastening requirements. Do not over drive fasteners as this may damage the underlayment. The reflective insulating underlayment shall be fastened as necessary to hold in place and allow for a safe walk able surface for the installer.
- C. Reflective insulating roof underlayment can also be installed over a solid wood deck with reflective insulating side facing up provided the installed primary roof covering provides an air space above the reflective insulating side of the underlayment.
- D. Reflective insulating roof underlayment can also be installed over Sharkskin Ventilated Roof Mat® pedestals up, with the reflective side of the Sharkskin Ultra Radiant® facing the air gap created by the pedestals.
- E. Tinted lenses are recommended to be worn during installation when reflective side is installed facing upward.

**3.03 Cleaning and Protection**

- A. **Cleaning:** Remove temporary coverings and protection of adjacent work areas. Repair or replace any damaged installed underlayment. Clean installed products in accordance with manufacturer's instructions prior to owner's Acceptance, which is to remove all loose debris and leave deck in clean broom swept manner. Remove construction debris from project site and legally dispose of debris. **Protection:** Protect installed product's finished surfaces from damaged during construction.