

**PRODUCT AND SYSTEM GUIDE SPECIFICATION** Environmentally Safe Products, Inc. (ESP) Low-E ThermaSheet® reflective roof underlayment insulation. The intent of this guide specification from the manufacturer is to assist the specifier in the correct specifying of the ESP Low-E ThermaSheet® product for residential and commercial building types. ESP manufactures a complete line of both residential and commercial reflective insulation products. Low-E ThermaSheet is a reflective roof underlayment insulation comprised of double sided scrimmed aluminum foil laminated to polyethylene foam. It can be used under composite shingle, metal panel, clay tile, wood shake, and slate roofing. This underlayment is used as an alternative to asphalt-saturated felts conforming to ASTM D226 Type I and Type II.

Minimum roof slope is 2:12 (17%). The specifier must edit this guide specification to fit project specific requirements. Contact an ESP specialist for additional assistance and current information. 1-800-289-5693. Throughout this guide specification, there are specific notes to assist in editing of the text: [ BOLD TEXT ] within square brackets means options, where a choice needs to be made. Remove brackets and unbold text. < TEXT > in angle brackets means a choice needs to be inserted. Remove brackets and unbold text. Coordinate cross references to other specification sections with the actual Specification Section numbers or Division numbers and titles used for the Project being specified. Please note that ESP will not be held responsible for edited versions of this specification used for individual projects.

## SECTION 073005

### ROOFING UNDERLAYMENT

#### PART 1 - GENERAL

##### 1.1 SUMMARY

###### 1.

**Specifier Note:**  
**Edit for the type of roofing specified for this Project.**

###### B. Section Includes:

1. Reflective roof insulation installed as underlayment to roof <composite shingles> <metal panels> <clay tiles> <wood shakes. <slate>.

***Environmentally Safe Products, Inc. (ESP)***

***Specifier Note:***

***Select all that apply and or add others that apply.***

C. [Relataed Requirements]

1. [Division 07 Sections for roofing.]
2. [Division 06 Section for sheathing.]

***Specifier Note:***

***Select all that apply and or add others that apply.***

1.2 REFERENCES

- A. 2019 California Building Code (CBC).
- B. 2019 California Residential Code (CRC).
- C. 2020 Florida Building Code - Building.
- D. 2020 Florida Building Code - Residential.
- E. 2021, 2018, 2015, and 2012 International Building Code (IBC).
- F. 2021, 2018, 2015, and 2012 International Residential Code (IRC).

***Specifier Note:***

***International Code Council (ICC) Evaluation Services.***

- G. ICC ES ESR-3652: Roofing underlayments: ESP Low-E® Therma-Sheet 4LMPX 1/8 inch and ESP Low-E® ThermaSheet 4LFPX 7/32 inch.

1.3 ADMINISTRATIVE REQUIREMENTS

***Specifier Note:***

***Edit the duration desired, noted as one week before start of Work.***

- A. Pre-installation Meeting Attendance and Procedure:
  1. Conduct meeting one week before starting Work of this Section.

***Specifier Notes:***

***You may want to include the shingle, shake, panel, tile, or slate installer, or sheathing installer.***

***Coordinate this with what is named in Division 01. Remove this if already named in Division 01.***

2. Additional Attendees:

***Environmentally Safe Products, Inc. (ESP)***

***Specifier Notes:***

***You may want to include the coordination of certain transitions, like ice shield at gutter edges and rake of roof.***

***Coordinate this with what is named in Division 01. Remove this if already named in Division 01.***

3. Additional Agenda Items:

1.4 ACTION SUBMITTALS

- A. Product Data: Submit for each product type.
- B. Shop Drawings: Submit plans and elevations for fastener placement, framed openings, special details and any other attachments.
- C. Sample: 12 inch by 12 inch underlayment sample.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original unopened, undamaged containers with identification labels intact.
- B. Store to protect from damage due to water and weather.

1.6 JOB CONDITION

- A. Do not install underlayment on wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Single Source Responsibility: Furnish roof underlayment by a single manufacturer.
- B. Approved Manufacturer/Product: Environmentally Safe Products, Inc; ESP Low-E ThermaSheet
  - 1. Contact ESP:
    - a. 313 West Golden Lane, New Oxford, Pennsylvania, 17350.
    - b. Telephone: 717-624-3581; Toll Free: 1-800-289-5693.
    - c. Fax: 717-624-7089.
    - d. Email: [sales@low-e.com](mailto:sales@low-e.com).
    - e. Website: <http://www.low-e.com>.
- C. Substitutions: **[See Division 01] [Not permitted].**

## 2.2 ROOF UNDERLAYMENTS

**Specifier Note:**

**Choose which roof thickness is needed for Project. If using both, tag with different tags (ie; UL-1 and UL-2), so that each type can be located as tagged on Drawings.**

- A. ESP Low-E® ThermaSheet® 4LMPX 1/8 inch thick with a 4 inch overlapping flange.
  - 1. Description: Consists of a 1/8 inch (3.2 mm) polyethylene core with 5 by 5 scrim-reinforced aluminum foil top surface, and 2 by 2 scrim-reinforced aluminum foil bottom surface.
  - 2. Total Weight: 2.4 pounds per 100 sq. ft.

**Specifier Note:**

**Other roll sizes are available. Contact ESP for more information.**

- 3. Standard Size: 4 ft. by 125 ft long.
- B. Performance:
  - 1. R-Value: ASTM C518; under shingles 0.5.

**Specifier Note:**

**System R-Value for this installation method was calculated using data from ASHRAE Handbook of Fundamentals.**

- 2. System R-Value: R-6.4 downward heat flow only (with 1.5 inch airspace).
  - 3. Perm Rating: ASTM E96; 0.008.
  - 4. Emittance: ASTM C137; 0.03.
- C. ESP Low-E® ThermaSheet® 4LFPX 7/32 inch thick with a 4 inch overlapping flange.
  - 1. Description: Consists of a 7/32 inch (5.6 mm) polyethylene core with 5 by 5 scrim-reinforced aluminum foil top surface, and 2 by 2 scrim-reinforced aluminum foil bottom surface.
  - 2. Total Weight: 4.8 pounds per 100 sq. ft.

**Specifier Note:**

**Other roll sizes are available. Contact ESP for more information.**

- 3. Standard Size: 4 ft. by 125 ft long.
- D. Performance:
  - 1. R-Value: ASTM C518; under shingles 1.03.

***Specifier Note:***

***System R-Value for this installation method was calculated using data from ASHRAE Handbook of Fundamentals.***

2. System R-Value: R-6.4 downward heat flow only (with 1.5 inch airspace).
3. Perm Rating: ASTM E96; 0.008.
4. Emittance: ASTM C137; 0.03.

### 2.3 OTHER MATERIALS

- A. Roof Tape: ESP Low-E Tape.
- B. Fasteners: Cap fasteners approved by roof underlayment manufacturer.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify conditions and measurements affecting work of this Section at site. Make sure that detrimental conditions are corrected before proceeding with installation.
- B. Verify that installation of metal flashings, ice shield, and work of other trades with penetrates roof deck has been completed satisfactorily.

### 3.2 INSTALLATION

- A. Install roof underlayment in accordance with manufacturer's printed instructions.
- B. Place rolls horizontally with foil flange parallel with gutter edge. First run placed at the bottom edge or gutter edge. Use standard cap fasteners to fasten underlayment to roof deck.
- C. Install subsequent runs with roll oriented so flange faces downward and lays over foam core of previous run.
- D. Install rain edge trim over underlayment at rake edges.
- E. Tape vertical seams where no flange is present.
- F. If underlayment will be left exposed for any length of time, or when inclement weather is expected, fasten or tape flange edges down so wind driven rain cannot penetrate under roof underlayment.

### 3.3 CLEANING

- A. Waste Management: Dispose of leftover material in AHJ-approved solid waste landfill. Follow all regulatory requirements for disposal.

END OF SECTION