

SECTION 072501

THERMAL AND WATER-RESISTIVE BARRIERS

PRODUCT AND SYSTEM GUIDE SPECIFICATION

Environmentally Safe Products, Inc. (ESP)
Low-E Housewrap® Thermal and Water-Resistive Barrier

The intent of this guide specification from the manufacturer is to assist the specifier in the correct specifying of the ESP Low-E Housewrap® for residential building types. ESP manufactures a complete line of both residential and commercial reflective insulation products.

Low-E Housewrap can be used to enhance a wall system to comply with IECC 2012, 2015, 2018 R-value or U-value requirements.

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:

1. **[BOLD TEXT]** within square brackets means options, where a choice needs to be made. Remove brackets and unbold text.
2. **< 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.

Please note that ESP will not be held responsible for edited versions of this specification used for individual projects.

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes

1. Thermal and water-resistive barrier over exterior wall sheathing under the exterior wall cladding.

Environmentally Safe Products, Inc. (ESP)

Specifier Note:

Select all that apply and or add others that apply.

B. [Related Requirements]

1. [Division 06 Sections for wall sheathing to receive water-resistive barrier system.]
2. [Division 07 Section for wall cladding sections.]
3. [Division 08 Sections for coordination of window and door tie-in to water-resistive barrier system.]

1.2 REFERENCES

A. Definitions:

1. Thermal and Water Resistive Barrier: A material that is intended to perform as a secondary barrier behind an exterior cladding, providing a means to resist penetration of liquid water while providing thermal properties. Also known as Low-E Housewrap.

B. Reference Standards:

1. ICC-ES Evaluation Report, ESR- 3079.
2. ASTM International:
 - a. ASTM E 84; Test Method for Surface Burning Characteristics of Building Materials.
 - b. ASTM E 96; Test Method for Water Vapor Transmission of Materials.
 - c. ASTM E 2178; Test Method of Air Permeance of Building Materials.
3. AATCC – American Association of Textile Chemists and Colorist:
 - a. Test Method 127 Water Resistance: Pressure Test.

1.3 PREINSTALLATION MEETINGS

Specifier Note:

Insert a number

- A. Meet at Project site **<Insert number>**days before starting installation.

Specifier Note:

Select all that apply

- B. Required Attendees: Contractor, Installer, [Installer of windows and doors,] [Installer of exterior cladding,] other affected trades, [Architect] and [Owner].

1.4 ACTION SUBMITTALS

- A. Product Data: Current technical literature and construction details.
- B. Samples: Water-Resistive Barrier membrane, minimum 8-1/2 inches by 11 inches.

Environmentally Safe Products, Inc. (ESP)

Specifier Note:

Retain following article / paragraphs if required for any sustainable requirements. Coordinate final requirements with Division 01. Add additional sustainable requirements not listed. Check also manufacturer's website for current information.

1.5 [SUSTAINABLE SUBMITTALS

A. LEED Documentation Submittals:

1. Potential Credits:

- a. SSp1, Construction Activity Pollution Prevention.
- b. EA p2, Minimum Energy Performance.
- c. EA Credit 1, Optimize Energy Performance.
- d. EA Credit 2, Onsite Renewable Energy.
- e. EA Credit 6, Green Power.
- f. MR Credit 4, Recycled Content.
- g. MR Credit 5, Regional Materials.
- h. IEQ Credit 4.1, Low-Emitting Materials.
- i. IEQ p1, Minimum Air Quality Performance.
- j. IEQ Credit 7.1, Thermal Comfort.
- k. IDc1, Innovation in Design.]

B. [Enterprise Green Communities criteria for building certification.]

C. [Green Globes Sustainable criteria for building certification.]

1.6 INFORMATIONAL SUBMITTALS

A. ENERGY STAR applicable requirements.

1.7 CLOSEOUT SUBMITTALS

A. General Submittal Procedures: Division 01.

1.8 QUALITY ASSURANCE

A. Qualifications:

1. Installers: A firm experienced in applying water resistive barrier materials similar in design, material, application and extent to those indicated for this project, whose work has resulted with a record of successful service performance.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Delivery and Acceptance Requirements:

Environmentally Safe Products, Inc. (ESP)

1. Deliver water-resistive barrier materials in manufacturer's original, unopened and undamaged packaging.
2. Transport large quantities in ventilated vehicles as recommended by manufacturer.

B. Storage and Handling Requirements:

1. All insulation products including Low-E Housewrap should be stored dry, sheltered from adverse weather conditions inside their sealed original packaging until installation. Keep away from high temperatures, ignition sources and heating equipment.
2. It is preferred by the manufacturer that final exterior cladding be installed within 30 days after Low-E Housewrap installation.

1.10 FIELD CONDITIONS

A. Ambient Conditions: Perform work within following limitations.

1. Building enclosed and environmental systems maintaining design conditions for Owner occupancy.
2. Temperature: Avoid temperatures above 158 degrees F. Keep from direct sunlight.

1.11 WARRANTY

A. Manufacturer Warranty:

1. Warranty Period: 20 years for materials and workmanship.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Environmentally Safe Products, Inc.; ESP Low-E Reflective Insulation.

1. Contact ESP East:

- a. 313 W. Golden Lane. New Oxford, Pennsylvania 17350.
- b. Telephone: 717-624-3581, Toll Free: 1-800-289-5693.
- c. Fax: 717-624-7089.
- d. Website: <http://www.low-e.com/>

2. Contact ESP West:

- a. 2500 Arrowhead Drive - Unit 3, Carson City, Nevada 89706.
- b. Telephone: 775-841-3533, Toll Free: 1-877- 995-0686.
- c. Fax: 775-841-7089.
- d. Website: <http://www.low-e.com/>

Environmentally Safe Products, Inc. (ESP)

Specifier Note:
Select the one that apply

- B. Substitutions: [See Division 01.] [Not permitted.]

2.2 PERFORMANCE / DESIGN CRITERIA

- A. Surface Burning Characteristics: Class A, when tested in accordance with ASTM E 84.
 - 1. Flame Spread Index: Not more than 25.
 - 2. Smoke Developed Index: Not more than 450.
- B. System R-Value: Contact manufacturer for specific wall assembly types for R-value and U-value project compliance requirements.
- C. Water Resistance: ASTM D 777.
- D. Per Rating: ASTM E 96: 7 or 40 grams.
- E. Weight: Approximately 0.64 ounce per square foot (195 g/m²).

2.3 MATERIALS

- A. Nominal 3/16-inch (5.6 mm) thick closed cell polyethylene core having a 1.5 pound per cubic foot (24.0 kg/m³) nominal density, flame laminated to a 99 percent pure aluminum foil facer which is then perforated.

2.4 ACCESSORIES

- A. Seam Tape: Provide manufacturer's recommended seam tape required for project application (no substitutions).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine the substrate and surface conditions and prepare in accordance with water-resistive barrier in compliance to manufacturer's recommendations and written instructions.

3.2 INSTALLATION, GENERAL

- A. Install materials according to water resistive barrier manufacturers written instructions and details to ensure continuity of watertight system.
- B. Install water-resistive barrier shall be installed over exterior wall sheathing prior to or after the installation of windows and or doors. If doors and windows have been installed, the Water-

Environmentally Safe Products, Inc. (ESP)

resistive barrier must be trimmed as close to the window or door opening as possible and sealed with approved adhesive tape.

1. Install water-resistive barrier with the foil facing visible from the exterior.
2. Provide material overlaps for horizontal seams.
3. Provide upper courses overlapping lower courses in a shingle-like manner.
4. Apply horizontal seams taped with manufacturer approved foil tape.
5. Tears and or imperfections in the foil facing should be repaired using ESP Low-E seam tape.
6. Provide vertical overlaps per manufacturer's recommendations.
7. Space fasteners on center both vertically and horizontally per application requirements.
8. Provide corrosion-resistant staples and corrosion-resistant nails.
9. Prepare, treat inside and outside corners, seal horizontal surfaces at terminations and penetrations.

3.3 INSTALLATION OVER FOAM SHEATHING

- A. Foam Sheathing Application: Attach water-resistive barrier with roofing nails or manufacturer-approved fasteners whose length exceeds the foam thickness by a minimum of **1/2 inch (12.7 mm)**.

3.4 INSTALLATION IN EXTERIOR STUCCO APPLICATION

- A. Stucco Application: Water-resistive barrier shall be applied over two layers of Grade D water resistive barrier with a 60-minute water resistive rating, applied over sheathing in accordance with IBC Section 2510 or IRC Section R 703 or it may be installed in one layer where it is separated from stucco by an intervening, substantially nonwater-absorbing layer or designed drainage space.

3.5 CLEANING

- A. Waste Management: Incinerate or dispose of in authorities having jurisdiction approved solid waste landfill. Follow all regulatory requirements for disposal.

3.6 PROTECTION

- A. Protect installed thermal and water-resistive barriers from damage during application and remainder of construction activities where subject to abuse, damage and harmful weather exposure according to manufacturer's recommendation.

END OF SECTION