

SECTION 07 27 13

ENVERGE™ SELF ADHERED MEMBRANE BARRIERS ELEVATE™ ROOFING, WALL, AND LINING SYSTEMS

This specification is provided as a courtesy on an as-is basis and is not intended to substitute for specific design services provided by an architect, engineer, building envelope consultant, or other design professional. It is in the building owner's interest to consult with these professionals prior to executing the specified project. The building owner will ultimately assume the entire risk as to results, quality and performance of the barrier system specified.

EDITOR NOTE: Text underlined and/or red in color must be addressed to complete a final specification document. It is the sole responsibility of the editor to exercise appropriate care and sound professional judgment in the execution of this task.

PART 1 GENERAL

The project, Project Name located in City, ST, includes the provision of a complete Elevate roofing, wall, and lining systems Enverge membrane air and/or vapor barrier solution.

1.01 SUMMARY

- A. General Conditions, Supplementary Conditions, Instructions to Bidders, and Division 1: General Requirements shall be read in conjunction with and govern this section.
- B. This Specification shall be read as a whole by all parties concerned. Each Section may contain more or less than the complete work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their work.
- C. The work of this section includes, but is not limited to, the following:
 1. Materials and installation methods for non-permeable air and vapor barrier membrane systems.
 2. Materials and installation methods to bridge and seal air leakage pathways in roof and foundation junctions, window and door openings, control and expansion joints, masonry ties, piping, and other penetrations through the wall assembly.
 3. Materials and installation methods of through-wall flashing membranes.

1.02 RELATED SECTIONS **[retain as present or needed]**

- A. Section 033000 – Cast-In-Place Concrete.
- B. Section 042000 – Unit Masonry.
- C. Section 061643 – Gypsum Sheathing.
- D. Section 071113 – Bituminous Damp proofing.
- E. Section 071325 – Self-Adhering Sheet Waterproofing.
- F. Section 075300 – Elastomeric Membrane Roofing.
- G. Section 076200 – Sheet Metal Flashing and Trim.
- H. Section 079200 – Joint Sealants.

1.03 REFERENCES

- A. The following standards are applicable to this section:
 1. ASTM D5147: Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material.
 2. ASTM D5602: Standard Test Method for Static Puncture Resistance of Roofing Membrane Specimens.
 3. ASTM D1970: Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

4. ASTM D1876: Standard Test Method for Peel Resistance of Adhesives (T-Peel Test)
5. ASTM D903: Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
6. ASTM E283: Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
7. ASTM E96: Water Vapor Transmission of Materials.
8. ASTM E 330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's product data, installation instructions, use limitations and substrate preparation recommendations.
- B. Shop drawings showing locations and extent of air and vapor barrier system including details for terminations flashings, penetrations, window and door openings and treatment of substrate joints and cracks.
- C. Written documentation demonstrating installers' qualifications under the "Quality Assurance" article including reference projects of a similar scope.
- D. Samples: Submit representative samples of the following for approval:
 1. Self-Adhered Air Barrier Membrane.
 2. Self-Adhered Transition Membrane.
 3. Self-Adhered Through Wall Flashing.
- E. Warranty: Submit a sample warranty identifying the terms and conditions

1.05 QUALITY ASSURANCE

- A. Submit document stating the applicator of the primary air/vapor barrier membranes specified in this section is qualified by the manufacturer as suitable for the execution of the Work.
- B. Perform Work in accordance with manufacturer's written instructions and this specification.
- C. Maintain one copy of manufacturer's written instructions on site.
- D. Allow access to Work site by the air barrier membrane manufacturer's representative.
- E. Components used shall be sourced from one manufacturer, including sheet membrane, air barrier sealants, primers, mastics, and adhesives.
- F. Single-Source Responsibility:
 1. Obtain air barrier materials from a single manufacturer regularly engaged in manufacturing the product.
 2. Provide products which comply with all federal, state, and local regulations controlling use of volatile organic compounds (VOCs).

1.06 MOCK-UP

- A. Construct mock-up in accordance with Division 01 – Mock-ups.
- B. Provide mock-up of air/vapor barrier materials under provisions of Division 01 – Shop Drawings, Product Data and Samples.
- C. Where directed by [engineer] [architect] [consultant], construct typical exterior wall panel, 6 foot long by 6 foot wide, incorporating substrate, window frame, attachment of insulation and showing air barrier membrane application details.
- D. Allow 48 hours for inspection of mock-up by [engineer] [architect] [consultant] before proceeding with air barrier work. Mock-up may remain as part of the Work.
- E. Test mock-up for air and water infiltration to conform to Division 01 - Quality Control, in accordance with ASTM E 783 and ASTM E 1105.

1.07 PRE-INSTALLATION CONFERENCE

- A. Contractor shall convene [one] week prior to commencing Work of this section, under provisions of Division 01 – Project Meetings.
- B. Ensure all contractors responsible for creating a continuous plane of air tightness are present.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Refer to current Product SDS for proper storage and handling.
- B. Deliver materials to the job site in undamaged and original packaging indicating the name of the manufacturer and product.
- C. Store roll materials on end in original packaging. Protect rolls from direct sunlight until ready for use.
- D. Store air barrier membranes, adhesives and primers at appropriate temperatures as designated by the manufacturer.
- E. Keep solvent away from open flame or excessive heat.
- F. Wasted Management and Disposal:
 - 1. Separate and recycle waste materials in accordance with [Division 01 – Waste Management and Disposal, and] with the Waste Reduction Work Plan.
- G. Contractor to verify compliance for Volatile Organic Compounds (VOC) limitations of products to comply with all federal, state, and local regulations controlling use of volatile organic compounds (VOCs).

1.09 WARRANTY

- A. Provide manufacturer's standard material warranty.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Air/vapor barrier membrane components and accessories must be obtained as a single source from the membrane manufacturer to ensure total system compatibility and integrity.
- B. Acceptable Manufacturer: Elevate roofing, wall, and lining systems www.holcimelevate.com

2.2 MEMBRANES

- A. Primary sheet air/vapor barrier membrane shall be Enverge™ Air and Vapor SA (Self-Adhered) Barrier manufactured by Elevate roofing, wall, and lining systems; (self-adhesive) membrane is composed of elastomeric bitumen, a trilaminate woven polyethylene facer, and a silicone-treated release film.
- B. Membrane shall have the following physical properties:
 - 1. Tensile Strength: ASTM D 5147, 11.3/15.4 kN/m (64/88 lb/in)
 - 2. Ultimate Elongation: ASTM D 5147, 40/25%
 - 3. Static Puncture: ASTM D 5602, 400 N (90 lbf)
 - 4. Cold Temperature Flexibility: ASTM D 1970, -35 °C (-31 °F)
 - 5. Lap Adhesion: ASTM D 1876, 2000 N/m (11.4 lbf/in)
 - 6. Peel Resistance: ASTM D 903, 2800 N/m (16 lbf/in)
 - 7. Water Absorption: ASTM D 5147, 0.1% max
 - 8. Water Vapor Permeance: ASTM E 96(Proc B), 0.90 ng/Pa·s·m² (0.016 perm)
 - a. 25 mil silicone-treated release film: [36" x 75' (914 mm x 22.9 m)] [12" x 75' (304 mm x 22.9 m)] [6" x 75' (152 mm x 22.9 m)]
 - b. 40 mil kraft paper: [36" x 50' (914 mm x 15.2 m)] [18" x 50' (457 mm x 15.2 m)] [12" x 50' (304 mm x 15.2 m)] [6" x 50' (152 mm x 15.2 m)]
- B. Through-wall flashing membrane (Self-Adhering) shall be manufactured by Elevate roofing, wall, and lining systems; Elevate Enverge Thru-wall Flashing SA Membrane is composed of

elastomeric bitumen, a trilaminate woven polyethylene facer, and a 25mm silicone-treated release film and 40 mm kraft paper. Membrane shall have the following physical properties:

1. Tensile Strength: ASTM D 5147, 11.3/15.4 kN/m (64/88 lb/in)
2. Elongation: ASTM D 5147, 40/25%
3. Static Puncture: ASTM D 5602, 400 N (90 lbf)
4. Cold Temperature Flexibility: ASTM D 1970, -35 °C (-31 °F)
5. Lap Adhesion: ASTM D 1876, 2000 N/m (11.4 lbf/in)
6. Peel Resistance: ASTM D 903, 2800 N/m (16 lbf/in)
7. Water Absorption: ASTM D 5147, 0.1% max
8. Water Vapor Permeance: ASTM E 96 (Proc B), 0.90 ng/Pa·s·m² (0.016 perm)
9. Air Permeability: ASTM E 283 (75 Pa), <0.0003 L/sec·m² (5.8·10⁻⁵ ft³/min·ft²)
10. Resistance to gust wind load: ASTM E 330 (3000 Pa – 10 s), No delamination or variation in the air permeability
11. Resistance to sustained wind load: ASTM E 330 (100 Pa – 1 h), No delamination or variation in the air permeability
 - a. 40 mil: 18" x 50' (457 mm x 15.2 m)

2.03 PRIMERS

- A. Primer for self-adhering membranes shall be Elevate Enverge SB (Solvent Based) Primer which is a synthetic polymer-based cold sealing compound containing natural resins and solvent. Primer shall have the following physical properties:
 1. Color: Red
 2. Specific Gravity: 0.79 kg/L
 3. Solids Content: 24%
 4. Brookfield Viscosity, 25 °C (77 °F): 200 cP
 5. Flash Point: ASTM D 93, -30 °C (0 °F)
- B. Primer for self-adhering membranes shall be Elevate Enverge WB (Water Based) Primer which is a polymer emulsion-based primer designed to improve the adhesion of self-adhesive water proofing membranes on most substrates. Primer shall have the following physical properties:
 1. Color: Blue
 2. Specific Gravity at 20 °C (68 °F): 1 kg/L
 3. Solids Content: 55%
 4. Brookfield Viscosity, 25 °C (77 °F): 500 cP
- C. Enverge LVOC Primer as manufactured by Elevate roofing, wall, and lining systems

PART 3 INSTALLATION

3.01 EXAMINATION

- A. Verify that surfaces and conditions are ready to accept the Work of this section. Notify [engineer] [architect] [consultant] in writing of any discrepancies. Commencement of the work or any parts thereof shall mean acceptance of the prepared substrates.
- B. All surfaces must be clean, dry, smooth, and free of sharp edges, fins, loose or foreign materials, oil, grease, or residue.

3.02 INSTALLTION OF AIR BARRIER SYSTEM

- A. Self-Adhered Air Barrier Membrane:
 1. Elevate Enverge Air and Vapor Barrier SA Membrane must be installed in accordance with current Elevate roofing, wall, and lining systems specifications and details.
 2. Application temperature for 25 mil membrane should be min. 50 °F (10 °C). Application temperature for 40 mil membrane should be min. 14 °F (-10 °C).
 3. Prime substrate to receive air barrier membrane as required per manufacturers written

instructions.

4. The use of a primer is recommended in most applications. Apply a coat of Enverge SB Primer (Solvent Based) – W56-358-7093 or Enverge WB Primer (Water Based) – W56-358-7094 or Enverge LVOC Primer prior to installing the membrane.
5. Primer is required for surfaces such as OSB, wood, concrete, gypsum, or fiberglass structural panels. Allow primer to dry. When dry, the primer will feel tacky when using a dry finger test.
6. Polyurethane foam can be sprayed directly onto Enverge membrane. However, the membrane should be mechanically fastened to the substrate using a termination bar to junctions, window or door frames, endings, and on the perimeter of the building.
7. Elevate Enverge Air and Vapor Barrier SA Membrane may be left exposed up to 90 days.
8. Begin installation at the base of the wall placing top edge of membrane immediately below any masonry reinforcement or ties protruding from substrate. Overlap seams 3 inches.
9. When properly positioned, place against surface by pressing firmly into place. Roll membrane with extension-handled countertop roller immediately after placement.

B. Through-Wall Flashing Membrane:

1. Elevate Enverge Thru-Wall Flashing SA Membrane must be installed in accordance with current Elevate roofing, wall, and lining systems specifications and details.
 - a. Surfaces must be clean, dry, smooth, and free of sharp edges, fins, loose or foreign materials, oil, grease, or residue.
 - b. Prime surfaces and allow to dry, press membrane firmly into place, overlap minimum 2 inches at all end and side laps. Promptly roll all laps and membrane to ensure the seal.
 - c. The use of a primer is recommended. Apply a coat of **Enverge SB Primer (Solvent Based) – W56-358-7093 or Enverge WB Primer (Water Based) – W56-358-7094 or Enverge LVOC Primer** prior to installing the flashing.
 - d. Application temperature should be min. 14 °F (-10 °C).
 - e. Primer is required for surfaces such as OSB, wood, concrete, gypsum, or fiberglass structural panels. Allow primer to dry. When dry, the primer will feel tacky when using a dry finger test.
 - f. Polyurethane foam can be sprayed directly onto Enverge flashing. However, the flashing should be mechanically fastened to the substrate using a termination bar to junctions, window or door frames, endings, and on the perimeter of the building.
 - g. Enverge Thru-wall Flashing SA Membrane may be left exposed up to 90 days.
 - h. Hold flashing back 1/4 inch from face of wall surface with 3-inch overlap at seams.

C. Primers

1. Use Enverge SB Primer to prime and prepare exterior concrete, metal, wood, and plywood surfaces to strengthen the adherence of self-adhesive Enverge Air and Vapor Barrier SA Membrane and Flashing.
 - a. Application temperature should be min. 14 °F (-10 °C).
 - b. Mix before and during application.
 - c. Apply Enverge SB Primer to clean, dry surfaces using a brush, roller, or Airless sprayer.
 - d. Allow primer to dry before installing the membrane or flashing. Drying time varies from 15 to 60 minutes, depending on ambient temperature and amount applied. It's dry when sticky to the touch but not messy.
 - e. For best results, install the membrane, or waterproofing flashing as soon as the primer is dry.
 - f. Clean tools with petroleum solvents (petroleum spirits, Xylene, etc.).
2. Use Enverge WB Primer to prime and prepare interior or exterior concrete, metal, wood,

polystyrene surfaces, and gypsum plasterboard to strengthen the adherence of self-adhesive Enverge Air and Vapor Barrier Membrane and Flashing. It is particularly recommended when the solvent-based primer is not advised.

- a. Application temperature should be min. 41 °F (5 °C).
 - b. Membranes must be installed on the same day as the application of Enverge WB Primer.
 - c. Mix before and during application.
 - d. Apply Enverge WB Primer to clean, dry surfaces using a brush, roller, or an airless sprayer. Spray tip size: between 20 and 25 mil and pressure: 1300 psi continuous.
 - e. Allow primer to dry before installing the membrane or flashing. Drying time varies from ½ to 3 hours, depending on ambient temperature and amount applied. It's dry when sticky to the touch but not messy.
 - f. For best results, install the membrane, or waterproofing flashing as soon as the primer is dry.
 - g. Clean uncured material from tools with water. Cured material is best removed by solvents (Mineral spirits, Varsol, Xylene, etc.).
3. Enverge LVOC Primer

3.03 FIELD QUALITY CONTROL

- A. Make notification when sections of Work are complete to allow review prior to covering air/vapor barrier system.

END OF SECTION