

GUIDE SPECIFICATION FOR AIR-SHIELD™ LMP – FLUID-APPLIED MEMBRANE AIR BARRIER, VAPOR PERMEABLE

SECTION 07 27 26

Revision Date: January 13, 2025

Specifier Notes: This guide specification is written according to the Construction Specifications Institute (CSI) MasterFormat. The section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project. Coordinate this section with other specification sections and the drawings.

Specifier Notes: AIR-SHIELD LMP is a water-based air barrier that cures to form a tough, seamless, elastomeric membrane. AIR-SHIELD LMP exhibits excellent resistance to air leakage. AIR-SHIELD LMP has been specifically formulated to act as an air barrier and drainage plane within the building envelope, while allowing moisture vapor to pass through it. It may be applied to most common surfaces and integrated into various wall systems. AIR-SHIELD LMP is suitable for both new construction and retro-fit applications.

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. Surface preparation.
- B. Application of liquid-applied vapor permeable air barrier.
- C. Application of materials to bridge and seal air leakage pathways in the following conditions:
 - 1. Wall-to-roof connections and penetrations.
 - 2. Wall-to-foundation connections.
 - 3. Windows, curtain walls, storefronts, louvers and door penetrations.
 - 4. Expansion and control joints.
 - 5. Masonry ties.
 - 6. All other penetrations through the wall assembly.

1.02 RELATED SECTIONS

Specifier Notes: Edit the list of related sections as required for the project. List other sections dealing with work directly related to this section.

- A. Section 04 20 00 - Unit Masonry.
- B. Section 07 21 00 - Thermal Insulation.
- C. Section 07 50 00 - Membrane Roofing.
- D. Section 07 60 00 - Flashing and Sheet Metal.
- E. Section 07 70 00 - Roof and Wall Specialties and Accessories.
- F. Section 07 80 00 - Fire and Smoke Protection.
- G. Section 07 92 00 - Joint Sealants.
- H. Section 08 10 00 - Doors and Frames.
- I. Section 08 50 00 - Windows.
- J. Section 09 20 00 - Plaster and Gypsum Board.

1.03 REFERENCES

- A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
- B. ASTM D4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- D. ASTM E96 (Method B) - Standard Test Methods for Water Vapor Transmission of Materials.

- E. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- F. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors.
- G. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform or Cyclic Static Air Pressure Difference.
- H. ASTM E2178 - Standard Test Method for Air Permeance of Building Materials.
- I. ASTM E2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
- J. ASTM C1280 - Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing.
- K. GA-253-2018 – Application of Gypsum Sheathing.

1.04 SUBMITTALS

- A. Comply with Section 01 33 00 - Submittal Procedures.
- B. Submit manufacturer's product data and application instructions.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications:

Specifier Notes: Select 1 or 2 based on project requirement for air barrier installer. If project requires an Air Barrier Association of America (ABAA) installer, select 1.05 A.1. If an ABAA installer is not a requirement, select 1.05 A.2.

- 1. Air Barrier Installer shall be currently accredited under the Air Barrier Association of America and ensure applicators are certified in accordance with the ABAA Quality Assurance Program.
- 2. Use an experienced installer and adequate number of skilled personnel who are thoroughly trained and experienced in the application of the air barrier.
 - a. Air Barrier Installer performing Work shall be approved by air barrier membrane manufacturer.
- B. Obtain air barrier materials from a single manufacturer regularly engaged in manufacturing the product.
- C. Provide products which comply with all state and local regulations controlling use of volatile organic compounds (VOCs).

1.06 PRECONSTRUCTION MEETING

- A. Preconstruction Meeting: Convene [one] [] week prior to commencing Work of this section, in accordance with Section [XX XX XX] - Project Meetings, and Section [XX XX XX] – The Air Barrier System.

1.07 MOCK-UPS

- A. Prior to installation of air barrier, apply air barrier as follows to verify details under shop drawing submittals and to demonstrate tie-ins with adjoining construction, and other termination conditions, as well as qualities of materials and execution.
- B. Apply air barrier in field-constructed mock-ups of assemblies specified in Section 04 20 00 – Unit Masonry and Section 09 20 00 – Plaster and Gypsum Board and ASTM C1280.
- C. Apply air barrier in field-constructed mock-ups of assemblies specified in Section [XX XX XX], “Mock-Ups”.
- D. Construct typical exterior wall panel, 8 feet (2.4 m) long by 8 feet (2.4 m) wide, incorporating back-up wall, cladding, window and doorframe and sill, insulation, flashing, [building corner condition] [junction with roof system] [foundation wall] [and] [typical penetrations and gaps]; illustrating materials interface and seals.

- E. Test mock-up in accordance with Section [XX XX XX] – The Air Barrier System and in accordance with ASTM E783 and ASTM E1105 for air and water infiltration.
- F. Cooperate and coordinate with the Owner's inspection and testing agency. Do not cover any installed air barrier membrane unless it has been inspected, tested, and approved.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Store materials in a clean dry area in accordance with manufacturer's instructions.
- C. Store at temperatures at or above 40 degrees F (4 degrees C), free from contact with cold or frozen surfaces.
- D. Protect materials during handling and application to prevent damage or contamination.

1.09 ENVIRONMENTAL REQUIREMENTS

- A. Product not intended for uses subject to abuse or permanent exposure to the elements.
- B. Do not proceed with product application if rainfall is forecast or imminent within 12 hours.
- C. Do not apply membrane when air or substrate temperatures are below 20 degrees F (-6.7 degrees C) or within 24 hours after completed installation.

1.10 WARRANTY

- A. Provide manufacturer's standard material warranty.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. W. R. MEADOWS®, INC., 300 Industrial Drive / PO Box 338, Hampshire, Illinois 60140-0338. (800) 342-5976, Website: www.wrmeadows.com.

2.02 MATERIALS

- A. Liquid Air Barrier System: One component, polymer modified, cold applied liquid vapor permeable air barrier membrane.
 - 1. Performance Based Specification: Air barrier membrane shall be water-based, that cures to form a tough, seamless, elastomeric membrane having the following characteristics:
 - a. Color: Gray (standard version); Black (UV-resistant version).
 - b. Flexibility, ACI 212: Pass
 - c. Water Vapor Permeance, ASTM E96, Procedure B: >16 perms
 - d. Service Temperature: Not to exceed 175 degrees F (80 degrees C)
 - e. Elongation, ASTM D412: 125%
 - f. Tensile Strength, ASTM D412: 146 psi (1 MPa)
 - g. Nail Sealability, ASTM D1970: Pass
 - h. VOC Content: 99 g/L
 - i. Water Resistance, AATCC 127-2008: Pass – no leakage
 - j. Adhesion, ASTM D4541: >16 psi (0.11 MPa)
 - k. Crack Bridging, ES-AC 212: Pass
 - l. Low Temp Flexibility, ASTM D1970: No cracking
 - m. Mold and Fungus Resistant, various ASTMs: Pass
 - n. Flame Spread and Smoke Development, ASTM E84: Class A.
 - o. Flame Propagation Testing, NFPA 285: Complies with various assemblies.
 - 2. Proprietary Based Specification: AIR-SHIELD LMP by W. R. MEADOWS.

Specifier Notes: Where longer-term exposure times are anticipated or when open-joint claddings are specified, use UV-resistant AIR-SHIELD LMP-Black.

2.03 ACCESSORIES

- A. Transition Membrane and Flashing: 40-mil self-adhesive polymeric membrane for reinforcement of joints, inside and outside corners and dissimilar material connections.

1. AIR-SHIELD by W. R. MEADOWS.
- B. Through-Wall Flashing: 40-mil self-adhesive polymeric sheet membrane.
 1. AIR-SHIELD THRU-WALL FLASHING by W. R. MEADOWS.
- C. Liquid Flashing: Fluid-applied, single-component, flashing membrane reinforcement of joints, inside and outside corners and dissimilar material connections.
 1. AIR-SHIELD LIQUID FLASHING by W. R. MEADOWS.
- D. Alternate Self-Adhering Flashings: Self-adhering polymeric-backed with aluminum facer or butyl sheet flashing for use at door and window openings.
 1. AIR-SHIELD ALUMINUM FLASHING.
 2. AIR-SHIELD BUTYL FLASHING.
- E. Joint Reinforcing Fabric: Spun-bonded polyester fabric for reinforcement of flat joints and corner conditions with primary fluid-applied membrane.
 1. REINFORCING FABRIC HCR by W. R. MEADOWS.
- F. Membrane Adhesive/Primer:
 1. Temperatures above 40 F degrees F (4 degrees C): Water-Based Adhesive
 - a. MEL-PRIME™ W/B Water-Based Adhesive by W. R. MEADOWS.
 2. Temperatures below 30 degrees F (-1 degrees C): Solvent-Based Primer.
 - a. MEL-PRIME VOC-Compliant Solvent-Base Adhesive or Standard Solvent-Base Adhesive by W. R. MEADOWS.
- G. Pointing Mastic: mastic for sealing penetrations and terminations of membrane.
 1. POINTING MASTIC by W. R. MEADOWS.
- H. Termination Sealant: Moisture-cure sealant for joint and repair detailing.
 1. BEM by W. R. MEADOWS.
- I. Concrete Repair Materials: general purpose patching materials.
 1. MEADOW-PATCH™ 5 and MEADOW-PATCH 20 Concrete Repair Mortars by W. R. MEADOWS.
- J. Termination Bar: optional termination for through-wall flashing membrane.
 1. TERMINATION BAR by W. R. MEADOWS.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine surfaces to receive membrane are deemed appropriate in accordance with air barrier manufacturer's current technical literature.
- B. Notify [Architect] [Contractor] if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.
- C. Start of the Work shall construe installer acceptance of substrates and conditions.

3.02 SURFACE PREPARATION

- A. Protect adjacent surfaces not designated to receive air barrier.
- B. Clean and prepare surfaces to receive air barrier membrane in accordance with manufacturer's instructions.
- D. Ensure all areas to receive joint treatment, reinforcement and membrane application are clean, dry, smooth, and free from all bond-breaking contaminants. Remove and replace any damaged structural substrate components.
- E. Do not apply membrane system to surfaces unacceptable to manufacturer.
- F. All surfaces to receive fluid-applied membrane air barrier system must be clean, free of standing water, ice, snow, frost, dust, dirt, oil, curing compounds, or any other foreign material detrimental to proper adhesion of the membrane.

- G. Prefill all bug holes on concrete and masonry with appropriate cementitious patching mortar. Strike masonry joints flush.
- H. Patch all cracks, small voids, offsets, irregularities, and small deformities on concrete and masonry surfaces with appropriate cementitious patching mortar at least two hours before application. Eliminate all sharp protrusions and fins in cast-in-place concrete.

3.03 INSTALLATION

- A. Prime surfaces to receive self-adhering membranes within one working day with applicable primer. Areas not covered within one day shall be re-primed. Ensure primer extends a minimum of 1-inch (25.4 mm) beyond area to receive self-adhering membranes.
- B. Crack and Joint Treatment of Cast-in-Place Concrete:
 - 1. Prefill nonmoving 1/16 inch to 1/4-inch (1.6 mm to 3.2 mm) cracks and joints with termination sealant, mastic or liquid flashing and tool smooth, ensuring 1-inch (25.4 mm) coverage to both sides.
 - 2. Prefill nonmoving 1/4 inch to 1-inch (6.4 mm to 25.4 mm) cracks and joints with termination sealant, mastic or liquid flashing and allow to cure. Apply and tool smooth liquid flashing 3-inches (76.2 mm) band beyond both sides of the joint area. Alternatively, apply a 4-inch-wide (101.6 mm) section of self-adhered transition membrane, centered over joint.
- C. Dissimilar Material Connections:
 - 1. Connect joints between dissimilar building materials with a 6-inch-wide (152.4 mm) section of self-adhering transition membrane, centered over the dissimilar material joint.
 - 2. Alternatively, apply an 8-inch-wide (203.2 mm) band of liquid flashing, centered over the joint between material joint.
- D. Exterior Sheathing Panels:
 - 1. Install and fasten exterior wood sheathing panels according to the sheathing manufacturer's instructions.
 - 2. Cover all fastener heads and removed fastener holes with termination sealant, mastic or liquid flashing.
 - 3. Joint Treatment with Termination Sealant:
 - a. Prefill flat joints up to 1/4 inch (6.4 mm) with termination sealant and strike flush with both-sides of the exterior sheathing panels.
 - b. Allow sealant to cure for a minimum of 24 hours prior to proceeding with full application of air barrier membrane.

Specifier Notes: Prefill flat joints between 1/4-inch (6.4 mm) and 1-inch (25.4 mm) with termination sealant and allow to cure. Once cured, joint treatment shall follow methods outlined in Part 3.03 D.4. or 3.03 D.5.

- 4. Joint Treatment with Liquid Flashing
 - a. Prefill flat joints up to 1/4 inch (6.4 mm) with liquid flashing and strike flush with both sides of the exterior sheathing panels.
 - b. Prefill joints greater than 1/4 inch (6.4 mm) but not greater than 1/2 inch (12.8 mm) with liquid flashing and allow to become firm. Apply liquid flashing extending 3-inches (76.2 mm) from the center of the joint onto both sides of the exterior sheathing panels.
 - c. Run the spreader tool over the liquid flashing to remove inconsistencies.

Specifier Notes: When using liquid flashing to prefill gaps greater than 1/2 inch (12.8 mm) but not exceeding 1-inch (25.4 mm), use BEM termination sealant.

- 5. Joint Treatment with Self-Adhesive Membrane
 - a. Prime both sides of the joint extending 3 inch (76.2 mm) from the center with the required primer/adhesive.
 - b. Apply a 4-inch (25.4 mm) wide strip of self-adhesive membrane centered over the joint and roll press firmly into place.
 - c. Fill all joints wider than 1/4 inch (6.4 mm) with termination sealant prior to application of self-adhesive membrane.
- 6. Joint Treatment with Fluid-Applied Membrane

- a. Fill joint area with fluid applied membrane using a spreader tool or putty knife.
- b. Apply fluid applied membrane extending beyond the joint line 3-inch (76.2 mm) onto face of exterior sheathing.
- c. Fully embed the reinforcing fabric 3-inch (76.2 mm) wide into the wet fluid applied membrane centered over the joint.
- d. Run the spreader tool or putty knife over the embedded reinforcing fabric to remove any air bubbles.

Specifier Notes: Coat exposed, raw edges of exterior gypsum sheathing with adhesive primer prior to application of self-adhering or liquid flashings.

- E. Inside and Outside Corners:
1. Apply a 6-inch-wide (152.4 mm) section of self-adhering transition membrane flashing or liquid flashing onto properly prepared substrates at the center of inside and outside corners. Ensure a 2-inch (50.8 mm) overlap of successive sections.
 2. Roll all areas of membrane with roller ensuring full adhesion. Eliminate all wrinkles and fish-mouths.
 3. Alternatively, apply liquid flashing at the center of inside and outside corners, ensuring a minimum 3-inch (76.2 mm) lap onto each adjacent plane.

Specifier Notes: At architect's or consultant's discretion, additional securement of the horizontal leading edge of through-wall flashings with a termination bar can be considered.

- F. Through-Wall Flashing:
1. Apply self-adhering through-wall flashing a minimum 8 inches (203.2 mm) onto properly primed backup wall substrates. Ensure through-wall flashing is recessed ½-inch (12.7 mm) from exterior face of masonry cladding.
 2. Overlap successive sections of through-wall flashing 4 inches (101.6 mm) and apply termination sealant or mastic to each lap. Seal overlapped seams with mastic.
 3. Roll all areas of through-wall flashing to ensure full adhesion.
 4. Apply a bead of termination sealant or mastic onto horizontal leading edges and tool smooth to permit water shedding.

Specifier Notes: At the end of each day, where not over-coated with primary fluid-applied air barrier, seal the leading edges of self-adhering membranes with termination sealant or mastic. Tool smooth to permit water shedding.

Specifier Notes: Where open-joint cladding systems are specified that allow UV exposure to the air barrier, select the black, UV-resistant fluid-applied air barrier in lieu of the standard gray version.

- G. Primary Fluid-Applied Membrane Air Barrier Installation:
1. Apply air barrier membrane in accordance with manufacturer's instructions.
 2. Thoroughly mix membrane prior to application while avoiding air entrapment.
 3. Apply membrane by spray or roller to provide a uniform thickness of 55 wet mils.
 4. Overlap fluid-applied air barrier 2 inches (50.8 mm) onto the leading edges of transition membranes and flashings.
 5. Regularly inspect applied membrane with a wet mil gauge to ensure consistent thickness.
 6. Cured thickness of membrane should be 23 mils dry.
 7. Allow 48 hours for full cure of the membrane.

3.04 PROTECTION

- A. Cover air barrier system as soon as reasonably possible after application. For longer-term exposure or where open-joint cladding systems are specified, use UV-stable version fluid-applied air barrier.

END OF SECTION