GUIDE SPECIFICATION FOR AIR SHIELD LM (ALL SEASON) – LIQUID APPLIED AIR/VAPOR BARRIER

SECTION 07 27 26

FLUID APPLIED MEMBRANE AIR BARRIERS

Specifier Notes: This guide specification is written according to the Construction Specifications Institute (CSI) Format. 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 LM (ALL SEASON) is a single component, liquid applied, polymer-modified air/vapor barrier. AIR-SHIELD LM (ALL SEASON) cures to form a tough, seamless, elastomeric membrane, which exhibits excellent resistance to air and moisture transmission. AIR-SHIELD LM (ALL SEASON) has been specifically formulated to act as an air/vapor barrier within the building envelope. It may be applied to most common surfaces and integrated into various wall systems. The material is suitable for application on new construction and restoration projects.

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Application of single component, cold applied, liquid air/vapor barrier.

C. Application of materials to provide bridge and seal air leakage pathways in
   1. Wall and roof connections and penetrations.
   2. Connections to foundation walls.
   3. Walls, windows, curtain walls, storefronts, louvers or doors
   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.

K. Section 09 20 00 - Plaster and Gypsum Board.

1.03 REFERENCES

A. ASTM D146-97 - Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Fabrics Used in Roofing and Waterproofing.

B. ASTM D412-98a (2002) e1 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.

C. ASTM E96-00e1 (Method B) - Standard Test Methods for Water Vapor Transmission of Materials.

E. ASTM E283-91 (1999) - 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.

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 installer, select 1. If this is not a requirement, select 2.

1. Air Barrier Installer shall be currently accredited under the Air Barrier Association of America (ABAA) 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/vapor 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 [XXXX] - Project Meetings, and Section [XXXX] – The Air Barrier System.

1.07 MOCK-UPS

A. Prior to installation of air/vapor barrier, apply air/vapor 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/vapor barrier in field-constructed mock-ups of assemblies specified in Section 04200 - Masonry Units and Section 09253 - Gypsum Sheathing.

C. Apply air/vapor barrier in field-constructed mock-ups of assemblies specified in Section [XXXX], “Mock-Ups”.

D. Construct typical exterior wall panel, 8 feet long by 8 feet 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 [XXXX] – 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 and vapor 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 the material at room temperature or heat material to a minimum of 50° F (10°C) prior to application.

D. Ensure concrete has been cured for a minimum of 14 days prior to application.

E. Do not store at temperatures above 90°F (32°C) for extended periods.

F. Protect materials during handling and application to prevent damage or contamination.

G. Do not apply to polystyrene insulation boards.

1.09 ENVIRONMENTAL REQUIREMENTS

A. Product not intended for uses subject to abuse or permanent exposure to the elements.

B. Do not apply membrane when air, material, or surface temperatures are expected to fall below 10°F (-12°C) within 4 hours of completed application.

C. Do not apply membrane if rainfall is forecast or imminent within 2 hours.

D. Do not apply to frozen concrete.

E. For spray applications, ensure material has been stored at room temperature or heated to a minimum of 50°F (10°C) prior to application.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. W. R. MEADOWS, INC., PO Box 338, Hampshire, Illinois 60140-0338. (800) 342-5976. (847) 683-4500. Fax (847) 683-4544. Web Site www.wrmeadows.com.

2.02 MATERIALS

A. Liquid Air Vapor Barrier System: One component, polymer modified, cold applied liquid air/vapor barrier membrane.
   1. Performance Based Specification: Air/vapor barrier membrane shall be an elastomeric asphalt emulsion having the following characteristics:
      a. Air Leakage ASTM E2357: 0.04 cfm / ft^2 @ 75 Pa (1.57 lbs / ft^2).
      b. Air Permeability ASTM E2178: 0.004 cfm / ft^2 @ 75 Pa (1.57 lbs / ft^2).
      c. Water Vapor Permeance ASTM E96 (Method B): ≤0.1 perms.
      d. Elongation ASTM D412: 1500 %.
      e. Tensile Strength ASTM D412: 15 psi.

   2. Proprietary Based Specification: AIR-SHIELD LM by W. R. MEADOWS.

2.03 ACCESSORIES

A. Flashing and Transition Membrane: Self-adhesive polymeric sheet membrane having a thickness of 40 mils (1 mm).
   1. AIR-SHIELD THRU-WALL FLASHING by W. R. MEADOWS.

B. Liquid Flashing: Fluid applied, single component, flashing membrane for rough openings and detailing.
   1. AIR-SHIELD LIQUID FLASHING by W. R. MEADOWS.

C. Joint Tape: Self-adhesive polymeric membrane for joints of plywood and oriented strand board (OSB).
   1. AIR-SHIELD by W. R. MEADOWS.

D. Membrane Adhesive:
   1. Temperatures above 40° F (4° C): Water-Based Adhesive
      a. MEL-PRIME™ W/B Water-Base Primer by W. R. MEADOWS.
   2. Temperatures below 30° F (-1° C): Solvent-Based Primer.
      a. MEL-PRIME VOC Compliant Solvent-Base Adhesive or Standard Solvent-Base Adhesive by W. R. MEADOWS.

E. Pointing Mastic: mastic for sealing penetrations and terminations of membrane.
   1. POINTING MASTIC by W.R. MEADOWS.

F. Detailing Membrane: non-slump waterproofing material for joint detailing.
   1. BEM by W. R. MEADOWS.

G. Concrete Repair Materials: general purpose patching materials.
   .1 MEADOW-PATCH™ 5 and 20 Concrete Repair Mortars by W. R. MEADOWS.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine surfaces to receive membrane. Notify Architect if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.

3.02 SURFACE PREPARATION

A. Protect adjacent surfaces not designated to receive air/vapor barrier.

B. Clean and prepare surfaces to receive air/vapor barrier membrane in accordance with manufacturer's instructions.

C. Do not apply membrane to surfaces unacceptable to manufacturer.

D. Concrete surfaces must be clean, free of standing water, ice, snow, frost, dust, dirt, oil, curing compounds or any other foreign material that could prevent proper adhesion of the membrane.

E. Patch all holes and voids and smooth out any surface misalignments.

F. Patch all cracks, protrusions, small voids, offsets, details, irregularities and small deformities with cementitious patching mortar at least two hours before application.

G. Ensure joints between dissimilar building materials are sealed with a strip of self-adhesive membrane 6" (150 mm) wide, centered over the joint.

H. Exterior Sheathing Panels:
1. Install and fasten exterior sheathing panels according to the sheathing manufacturer's instructions.
2. Treat all countersunk and removed fasteners with joint filler or liquid flashing material.
3. Inspect the joint to ensure that all areas to receive joint treatment are clean, dry, smooth, and free from all bond-breaking contaminants.
4. Remove and replace any damaged structural wall components.

Specifier Notes: There are three methods of joint treatment recommended by W. R. MEADOWS for AIR-SHIELD LM (All-Season). Select (5, (6), or (7) based on project requirements.

5. Joint Treatment with self-adhesive membrane
   a. Prime either side of the joint extending 3" from the center with adhesive recommended by the manufacturer.
   b. Install a 4" (25.4 mm) strip of self-adhesive membrane centered over the joint and roll press firmly into place.
   c. Fill all joints wider than ¼" (6.4 mm) with detailing membrane prior to application of self-adhesive membrane.
6. Joint Treatment using liquid flashing
   a. Fill joint with liquid flashing creating a 1" band over the joint area.
   b. Do not strike flush with the sheathing surface.
   c. Run the spreader tool over the liquid flashing to remove any inconsistencies.
7. 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" onto face of exterior sheathing.
   c. Fully embed the reinforcing fabric 3" 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.

I. Plywood and Oriented Strand Board (OSB):
1. Install and fasten boards according to board manufacturer.
2. Apply membrane adhesive on either side of the joint extending 3" from the center.
3. Install a 4" (25.4 mm) strip of self-adhesive membrane centered over the joint and roll press firmly into place.
4. For joints width more than ¼" (6.4 mm), fill with detailing membrane prior to application of self-adhesive membrane.

3.03 APPLICATION OF AIR BARRIER SYSTEM

A. TRANSITION MEMBRANE

1. Prime surfaces to be covered in one working day with applicable primer.
2. Apply transition membrane with a minimum overlap of 75 mm (3") onto primed surface at all joints, columns, beams and dissimilar materials.
3. Roll membrane firmly into place.
4. Ensure membrane is fully adhered and remove all wrinkles and fish mouths.
5. Overlap subsequent courses of membrane a minimum of 50 mm (2") and ensure joints are fully adhered.
6. Seal top edge of transition membrane with pointing mastic.

B. ROUGH OPENING TRANSITION MEMBRANE

Specifier Notes: There are two methods of window and door rough opening details recommended by W.R. Meadows for Air-Shield LM. Select (1), or (2) based on project requirements.

1. Self-adhesive Transition Membrane.
   a. Prime the area to be detailed using adhesive recommended by the membrane manufacturer according to the substrate.
   b. Pre-cut the self-adhesive membrane for each area of the rough opening to ensure ease of handling.
   c. Apply the first pre-cut strip at the base of the rough opening by removing the release paper and rolling firmly into place, ensuring that there is a minimum of 3" (75 mm) of membrane extending onto the wall and a minimum of 3" (75 mm) of membrane extending into the rough opening.
   d. Repeat this procedure for the vertical areas of the rough opening and the header portion of the opening.
   e. Ensure all edge overlaps are a minimum of 2" (50 mm) and end to end overlaps are 4" (100 mm).
   f. Seal all terminations with mastic recommended by membrane manufacturer.

.2 Fluid Applied Transition Membrane using liquid flashing membrane
   a. Apply a coat of membrane adhesive on the raw edges of exterior gypsum board.
   b. Treatment of joints or cracks larger than ¼" (6.35 mm) and less than ½" (12.7mm).
      i. Prefill any joints or cracks with the liquid flashing material.
      ii. Apply a generous bead of material over the joint.
      iii. Press, and spread liquid flashing into the joint.
      iv. Allow material to skin over prior to full application of liquid flashing into the rough opening.
   c. Treatment of joints or cracks larger than ½" (12.7 mm)
      i. Install backer rod into the joint to control depth of liquid flashing material.
      ii. Apply a generous bead of material over and into the joint.
      iii. Press, and spread liquid flashing into the joint.
      iv. Smooth out using a spreader tool or putty knife
      v. Allow material to cure prior to full application of liquid flashing into the rough opening.
   .4 Apply a bead of liquid flashing in the rough opening starting at the top and continuing around the rough opening.
   .5 Spread the material using a spreader tool or putty knife across the rough opening surface.
   .6 Test the material thickness using a wet mil gauge to ensure that it has a thickness of 12-15 mils.

.7 Apply a generous bead of liquid flashing material to the vertical surface around the rough opening and spread this material 4” – 6” (100 – 152 mm) onto the vertical surface with a spreader tool or putty knife.
.8 Test the thickness to ensure the material has a thickness of 12-15 mils.
.9 Allow liquid flashing material to dry before installing any windows, doors, wall assembly, and full air barrier material.

B. THROUGH WALL FLASHING
1. Prime surfaces to be covered in one working day with applicable primer.
2. Remove release paper prior to application.
3. Apply though wall flashing at based of masonry walls as indicated on drawings.
4. Recess through wall flashing 1/2” (13 mm) from the face of the masonry.
5. Apply a bead of pointing mastic if through wall flashing is not embedded into masonry.

C. AIR BARRIER MEMBRANE
1. Apply air/vapor barrier membrane in accordance with manufacturer's instructions.
2. Thoroughly mechanically mix membrane prior to application.
3. Apply membrane by spray or roller at a minimum coverage rate of 17-20 ft^2/U.S. gal (1.6-1.9 m^2/3.78L) providing a thickness of 80 wet mils in two coats.
4. Frequently inspect surface area with a wet mil gauge to ensure consistent thickness.
5. Work material into any fluted rib forming indentations.
6. Cured thickness of membrane should be 45 mils dry.
7. Avoid use of products which contain tars, solvents, pitches, polysulfide polymers, or PVC materials that may come into contact with air/vapor barrier system.

3.04 PROTECTION

.1 Cover air/vapor barrier membrane as soon as possible, since it is not designed for permanent exposure.

END OF SECTION