The following specification text has been prepared to assist design professionals in the preparation of a specification section for Elemax™ 2600 silicone air and water resistive barrier coating. Design professional is responsible for editing information to meet their Project requirements and coordinate with other specifications sections and Drawings.

SECTION 07 27 26

FLUID APPLIED MEMBRANE AIR BARRIERS

Editor notes are included in hidden text to assist with product attributes and performance.

Elemax™ 2600 silicone air and water-resistive barrier (AWB) is a solvent free, fluid-applied, vapor permeable 100% silicone coating for AWB applications to coat and seal above-grade wall assemblies.

Elemax™ 2600 silicone AWB coating provides long-term air and water protection from a variety of elements: temperature extremes, sunlight / UV radiation, rain and snow.

For assistance on the use of the products in this section, contact Momentive Performance Materials at 877-943-7325, or visit their website at www.siliconesforbuilding.com.

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Liquid-applied, vapor permeable, air and water-resistive barrier system.

Add or delete Sections that specify materials impacted or required to be in place prior to installation of products of this Section.

B. Related Sections:
   1. Section 03 30 00 - Cast-in-Place Concrete: Concrete substrate to receive air barrier.
   2. Section 04 22 00 - Concrete Unit Masonry: Masonry substrate to receive air barrier.
   3. Section 06 16 00 – Sheathing: Sheathing substrate to receive air barrier.

1.2 SUBMITTALS

A. Product Data: Manufacturer's current technical data sheets, instructions for evaluating, preparing, and treating substrate, temperature and other limitations of installation conditions, Technical Data, and tested physical and performance properties.
   1. Submit letter from primary air barrier material manufacturer indicating approval of materials that are proposed to be used that are not currently listed in the accessories section of this specification for that manufacturer's material.
   2. Include statement from the primary air barrier material manufacturer that the materials used in their air barrier assembly which will be used to adhere to the underlying substrate are chemically compatible to the substrate material.

B. Shop Drawings: Indicate locations and extent of air barrier assemblies and details of typical conditions, intersections with other envelope assemblies and materials, membrane counter-flashings, and details showing how gaps in the construction will be bridged, how inside and outside corners are negotiated, how materials that cover the materials are secured with air-tight condition maintained, and how miscellaneous penetrations such as conduits, pipes, electric boxes and similar items are sealed.

C. Informational Submittals:
   1. Installer qualifications.

2. Compatibility: Submit letter from primary material manufacturer stating that materials proposed for use are permanently chemically compatible and adhesively compatible with adjacent materials proposed for use. Submit letter from manufacturer stating that cleaning materials used during installation are chemically compatible with adjacent materials proposed for use.
3. Current ICC-ES Evaluation Report verifying fluid applied material conformance with AC 212.
4. Current Clean Air Gold product certification verifying conformance to ANSI/ BIFMA e3 standard credits 7.6.1, 7.6.2 and/or credit 7.6.3, which includes California Department of Public Health (CDPH) Standard Method v1.2 01350 (2017), as well as conformance to low-emitting materials for WELL and LEED.

1.3 QUALITY ASSURANCE

A. Installer Qualifications:
1. Minimum 2 years' experience in Work of this Section.

Delete the following unless it applies to your Project. The Air Barrier Association of America certifies installers promoting a quality assurance program (QAP) to ensure products have been installed correctly. Installation by an accredited ABAA installer is not required for a warrantable installation of Elemax. Verify that there are installers in the Project location that are ABAA certified before selecting the following option.

2. [Company accredited by the Air Barrier Association of America (ABAA) with installers certified in accordance with the site Quality Assurance Program (QAP) used by ABAA.
   a. Fluid-applied membrane air barrier Installer(s) shall be certified by BPQI (Building Performance Quality Institute) for the ABAA Quality Assurance Program in accordance with the requirements outlined in the QAP program used by ABAA. Installers shall have their photo identification air barrier certification cards in their possession and available on the project site, for inspection upon request.]

B. Regulatory Requirements:
1. Conforms to IBC, IRC, IECC and Green Building Code requirements as an air barrier and a water resistive barrier.
2. ICC ESR Report: ESR-3983.
3. NFPA 285 compliant.

1.4 PRECONSTRUCTION CONFERENCE

A. Convene minimum 2 weeks prior to commencing Work of this Section.

B. Attendees: [Owner,] [Architect,] [Contractor,] [Construction Manager,] installer, and air barrier manufacturer's representative.

C. Agenda: Review construction and testing of mock-up, sequence of construction, coordination with substrate preparation, air barrier materials approved for use, compatibility of materials, coordination with installation of adjacent and covering materials, and details of construction and chemical/fire safety plans.

1.5 FIELD MOCKUP

Coordinate field mockup and location with Division 01, it may be in place or at a location off site.

A. Construct field mock up [in place] [at location indicated by Architect].

B. Size: Minimum 8 feet wide x 8 feet wide.

C. Apply air barrier to verify details under submittals and to demonstrate tie-ins with adjoining construction, other termination conditions, sequencing, and method of installation.

D. Incorporate backup wall construction, exterior cladding, window and door frame and sill, insulation, flashings, [building corner condition,] [junction with roof system] [foundation wall] [and] [typical penetrations and gaps].

E. Approved mockup [may] [may not] remain as part of the Work.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to Project site in original packages with seals unbroken, labeled with material Manufacturer's name, product, date of manufacture, and directions for storage.

B. Store materials in their original undamaged packages in a clean, dry, protected location and within temperature range required by material manufacturer. Protect stored materials from direct sunlight and other sources of ultra-violet light.

C. Handle materials in accordance with material manufacturer's recommendations.

1.7 PROJECT CONDITIONS

A. Temperature: Install fluid-applied air barrier material within range of ambient and substrate temperatures recommended by material manufacturer. Do not apply air barrier to a damp or wet substrate.

B. Field Conditions: Do not install air barrier in snow, rain, fog, or mist. Do not install air barrier when the temperature of substrate surfaces and surrounding air temperatures are below those recommended by the manufacturer.

C. Sequencing. Do not install air barrier material before the roof assembly has been sufficiently installed to prevent a buildup of water in the interior of the building.

D. Compatibility. Do not allow air barrier materials to come in contact with chemically incompatible materials.

E. Ultra-violet exposure. Do not expose air barrier materials to sunlight longer than as recommended by the material manufacturer.

Select warranty in coordination with Owner requirements.

1.8 WARRANTIES

A. Material Warranty: Provide manufacturer's standard [10] [15] [20] year material warranty.

PART 2– PRODUCTS

2.1 AIR BARRIER PERFORMANCE REQUIREMENTS

A. Material Performance: Provide air barrier materials which have an air permeance not to exceed 0.004 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.004 cfm/ft^2 @ 1.57 psf), (0.02 liters per square meter per second under a pressure differential of 75 Pa (0.02 L/(s·m^2) @ 75 Pa)) when tested in accordance with ASTM E2178 (unmodified).

B. The water vapor permeance Desiccant method, (Procedure A) and Water method (Procedure B) shall be determined in accordance with ASTM E96 and shall be declared by the material manufacturer.

C. Assembly Performance: Provide a continuous air barrier in the form of an assembly that has an air leakage not to exceed 0.04 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.04 cfm/ft^2 @ 1.57 psf) (0.2 liters per square meter per second under a pressure differential of 75 Pa (0.2 L/(s·m^2) @ 75 Pa)) when tested in accordance with ASTM E2357. The assembly shall accommodate movements of building materials by providing expansion and control joints as required. Expansion / control joints, changes in substrate and perimeter conditions shall have appropriate accessory materials at such locations.
   1. The air barrier assembly shall be capable of withstanding combined design wind, fan and stack pressures, both positive and negative on the envelope without damage or displacement, and shall transfer the load to the structure.
   2. Fluid applied air barriers shall not displace adjacent materials in the air barrier assembly under full load.
   3. The air barrier assembly shall be joined in an airtight and flexible manner to the air barrier materials of adjacent assemblies, allowing for the relative movement of assemblies due to thermal and moisture variations, creep, and anticipated seismic movement.

D. Connections to Adjacent Materials: Provide connections to prevent air leakage at the following locations:
   1. Foundation and walls, including penetrations, ties and anchors.
   2. Walls, windows, curtain walls, storefronts, louvers and doors.
   3. Different assemblies and fixed openings within those assemblies.
   4. Wall and roof connections.

5. Floors over unconditioned space.
6. Walls, floor and roof across construction, control and expansion joints.
7. Walls, floors and roof to utility, pipe and duct penetrations.
8. Seismic and expansion joints.
9. All other potential air leakage pathways in the building envelope.

2.2 MANUFACTURERS

A. Basis of Design: Elemax™ 2600 by Momentive Performance Materials (www.siliconeforbuilding.com).

B. Substitutions: [Substitutions not permitted.] [Refer to Division 01 for Substitution Procedures.]

2.3 AIR BARRIER MATERIALS

A. Material: 100% Silicone.

B. UV Exposure: No limit.

C. Application Temperature: 0 to 158 degrees F (minus 18 to 70 degrees C).

D. Performance Properties:

Property	Value(1)	Test Method
Required Dry Film Thickness	17 mils (430 µ) dry	Apply 19 mils (480 µ) wet
Air Permeance – tested at 1.57 psf (75 Pa)	0.00004 cfm/ft² (0.0002 L/s·m²)	ASTM E2178
	0.00008 cfm/ft² (0.0004 L/s·m²)	CAN/ULC-741
Assembly Air Leakage - tested at 1.57 psf (75 Pa)	0.0002 cfm/ft² (0.0009 L/s·m²)	ASTM E2357
	0.0004 cfm/ft² (0.0019 L/s·m²) Class A1	CAN/ULC-742
Water Resistance	Pass	AATCC 127
Water Penetration	No water penetration observed after 15 min. @ 62.5 psf (2993 Pa)	ASTM E331
Water Penetration	No water penetration after structural, racking, restrained environmental conditioning: Tested for 15 minutes at 2.86 psf (137 Pa)	ASTM E331
Resistance to Wind-Driven Rain	Pass: No visual leaks or moisture weight gain observed after 24 hrs @ 26 psf (1245 Pa)	ASTM D6904
Water Vapor Permeance	10.5 perms @ 17 mils (430 µ) DFT	ASTM E96 Procedure BW (Inverted Water Method)
Water Vapor Permeance	10.2 perms @ 17 mils (430 µ) DFT	ASTM E96 Procedure B (Water Method)
	7.9 perms @ 17 mils (430 µ) DFT	ASTM E96 Procedure A (Desiccant Method)
UV & Weathering Resistance	No degradation after 5000 hours	ASTM G154
Self Sealability around Nails	Pass @ 17 mils (430 µ) DFT	ASTM D1970
Crack Bridging Ability (1/16 inch or 1.5 mm)	Pass	ASTM C1305
Mildew Resistance	0 - No Growth	ASTM D5590
Service Temperature Range	Minus 40 F to plus 300 degrees F (minus 40 to plus 149 degrees C)	
Pull off Strength (concrete)	126 psi (0.87 MPa)	ASTM D4541
Pull off Strength (fiberglass mat faced gypsum sheathing)	44 psi (0.30 MPa)(2)	ASTM D4541

Property	Value[1]	Test Method
Tensile Strength	204 psi (1.40 MPa)	ASTM D412[3]
Elongation	542 percent	ASTM D412[3]
Multi-Story Wall Assembly Burn Test	Passed in assembly tested and acceptable for use in various wall assemblies per engineering analysis	NFPA 285
Surface Burning	Flame Spread: 10 Smoke Developed: 185 NFPA Class A, UBC Class 1	ASTM E84
Sequential Testing- Weathering		
UV Light Exposure		ICC-ES AC212
Accelerated Aging		ICC-ES AC212
Hydrostatic Pressure Test	No water penetration after UV exposure and accelerated aging: Tested for 5 hours with 21.7 in (55 cm) of hydrostatic head	AATCC 127
Freeze-Thaw	No cracking, checking, crazing, erosion, delamination or other deleterious effects.	ICC-ES AC212 ASTM E2485 Method B
Water Resistance	No deleterious effects after 14 day exposure	ASTM D2247
Tensile Bond	Minimum 15 psi (105 kPa)	ASTM C297

(1) Average value. Actual value may vary.
(2) Full strength of silicone not realized due to failure of fiberglass mat / sheathing substrate prior to coating failure.
(3) Samples were prepared per ASTM D2370 and tested in accordance to ASTM D412.

2.4 ACCESSORIES

A. Liquid Flashing (Detail Sealant/Adhesive): Elemax™ 5000 Liquid Flashing, SilPruf™ SCS2000, SilPruf™ SCS2700, SilPruf™ SCS9000NB, or SWS.

B. Reinforcing Fabric: RF100; width as dictated by project conditions.

C. Sheet Flashing: Elemax™ SS Flashing; width as dictated by project conditions.

D. Silicone Transition Membrane: UltraSpan™ UST2200; width as dictated by project conditions.

E. Pre-Cured Silicone Molded Corners: UltraSpan™ USM inside and outside corners.

PART 3- EXECUTION

3.1 EXAMINATION

A. Verify that surfaces and conditions are suitable prior to commencing work of this section. Do not proceed with installation until unsatisfactory conditions have been corrected.

B. Ensure that the following conditions are met:
   1. Surfaces are sound, dry, even, and free of excess mortar or other contaminants.
   2. Inspect substrates to be smooth without large voids or sharp protrusions.
   3. Inspect masonry joints to be reasonably flush and completely filled, and ensure excess mortar sitting on masonry ties has been removed.

C. Verify substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D4263 and take suitable measures until substrate passes moisture test.

D. Verify sealants are compatible with membrane proposed for use. Perform field peel-adhesion test on materials to which sealants are adhered.

E. Notify Architect in writing of anticipated problems using fluid-applied membrane over substrate prior to proceeding.

3.2 PREPARATION

A. Confirm surface preparation with manufacturer based on substrate type, construction progress, sequencing, and environmental conditions present.

B. Surface Preparation: Clean, prepare, and treat substrate according to material Manufacturer's written instructions. Provide clean, dust-free, and dry substrate for air barrier application.

C. Condition of Surfaces:
   1. Clean, dry and free of contaminants that could interfere with proper bonding of materials.
   2. Masonry Joints: Struck flush. Fill cracks greater than crack bridging ability of material, routed and filled where necessary, with trowel application of liquid flashing prior to application of liquid membrane.
   3. Sheathing Joints: Treated per manufacturer’s installation details.

D. Remove loose mortar and other contaminations by wire brush or similar abrasion to provide stable clean surface for application.’

E. Remove grease, oil, bitumen, form release agents, paints, curing compounds, other contaminants, and film forming coatings from concrete.

F. Mask adjoining surfaces not to be covered by air barrier.

G. Spot treat over and under fasteners with liquid flashing or air barrier material.

3.3 INSTALLATION

A. Install air barrier membrane and accessories in accordance with manufacturer’s instructions.

B. Transition and Detailing Treatment:
   1. Install appropriate materials to treat sheathing joints, expansion joints, rough openings, transitions, terminations, penetrations, fastener heads, and other similar surface irregularities.
   2. Perform detailing before or after air barrier membrane application.

C. Treat sheathing joints less than 1/4 inch (13 mm) in width using any of following methods:
   1. Liquid flashing.
   2. 4 inch (100 mm) reinforcing fabric embedded in air barrier material and centered on joint.

D. Inside and Outside Corners: Extend liquid flashing or reinforcement minimum 3 inches (75 mm) onto each angle change using any of following methods:
   1. Liquid flashing.
   2. Minimum 6 inch (150 mm) reinforcing fabric embedded in air barrier material and centered on joint.
   3. Minimum 6 inch (150 mm) sheet flashing centered on corner.
   4. Silicone transition membrane set in liquid flashing and centered on corner.

E. Rough Openings. Extend liquid flashing or reinforcement minimum 3 inches (75 mm) onto vertical wall and into rough opening using any of following methods:
   1. Liquid flashing.
   2. Minimum 6 inch (150 mm) reinforcing fabric embedded in air barrier material and centered on joint.
   3. Minimum 6 inch (150 mm) sheet flashing centered on corner.
   4. Minimum 6 inch (150 mm) silicone transition membrane set in liquid flashing and centered on corner.
   5. Pre-cured silicone molded outside corners in combination with any of above methods.

F. Pipe and Duct Penetrations: Treat using any of following methods:
   1. Liquid flashing.
   2. Reinforcing fabric embedded in air barrier material and centered on joint. Ensure that reinforcing fabric extends minimum 2 inches (50 mm) onto wall.

G. Static Joints less than 1/2 inch (13 mm) in width and Expansion Joints:
   1. Treat using minimum 3 inch (150 mm) silicone transition membrane set in liquid flashing or air barrier material and centered on joint.
   2. Ensure that transition membrane extends minimum 1 inch (25 mm) onto wall.

H. Transitions: Treat using any of following methods:
   1. Liquid flashing.
   2. Reinforcing fabric embedded in air barrier material and centered on joint.

3. Sheet flashing centered on corner.
4. Silicone transition membrane set in liquid flashing.

I. Through Wall Flashing. Install sheet flashing.

J. Air Barrier:
1. Apply by spray, power roller, roller, or brush at to minimum dry film thickness recommended by manufacturer.
2. Touch up damaged areas using same procedures as initial application, at any time after application; coating may be wet or cured.

3.4 CLEANING

A. Clean air barrier materials from surfaces that will be exposed in completed work using cleaning agents and procedures recommended by manufacturer.

B. Remove masking materials after installation.

C. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction and acceptable to the primary material manufacturer.

3.5 PROTECTION

A. Protect air barrier from damage during application and for remainder of construction.

B. If damage occurs, repair per manufacturer’s instructions.

END OF SECTION