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SECTION 07272

**Fluid-applied membrane air barriers**

This Section uses the term "Architect." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
   * + 1. RELATED DOCUMENTS
          1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
       2. SUMMARY
          1. This Section includes the following:

Adjust list below to suit Project.

Fluid-applied membrane air barrier, vapor impermeable.

Fluid-applied membrane air barrier, vapor permeable.

* + - * 1. Related Sections include the following:

List below only products and construction that the reader might expect to find in this Section but are specified elsewhere.

Division 01 Section "Allowances" for testing and inspecting allowances.

Division 04 Section "Unit Masonry" for embedded flashings.

Division 06 Section "Sheathing" for wall sheathings, wall sheathing joint-and-penetration treatments, building paper, and building wraps.

Division 07 low-slope roofing Sections for roof air barriers.

Division 07 Section "Thermal Insulation" for foam-plastic board insulation.

Division 07 Section "Modified Bituminous Sheet Air Barriers."

Division 07 Section "Sheet Metal Flashing and Trim" for sheet metal flashings.

Division 07 Section "Joint Sealants" for joint-sealant materials and installation.

* + - * 1. Related Sections include the following:

List below only products and construction that the reader might expect to find in this Section but are specified elsewhere.

Division 1 Section "Allowances" for testing and inspecting allowances.

Division 4 Section "Unit Masonry Assemblies" for embedded flashings.

Division 6 Section "Sheathing" for wall sheathings, wall sheathing joint-and-penetration treatments, building paper, and building wraps.

Division 7 low-slope roofing Sections for roof air barriers.

Division 7 Section "Building Insulation" for foam-plastic board insulation.

Division 7 Section "Self-Adhering Sheet Air Barriers."

Division 7 Section "Sheet Metal Flashing and Trim" for sheet metal flashings.

Division 7 Section "Joint Sealants" for joint-sealant materials and installation.

* + - 1. DEFINITIONS

Retain abbreviation and term that remain after this Section has been edited.

* + - * 1. ABAA: Air Barrier Association of America.
        2. Air Barrier Assembly: The collection of air barrier materials and auxiliary materials applied to an opaque wall, including joints and junctions to abutting construction, to control air movement through the wall.
      1. PERFORMANCE REQUIREMENTS

Retain one of first two options in paragraph below depending on whether a vapor-retarding or -permeable air barrier is required. Consider retaining third option if air barrier will serve as a primary or secondary drainage plane.

* + - * 1. General: Air barrier shall be capable of performing as a continuous vapor-[retarding] [permeable] air barrier[ and as a liquid-water drainage plane flashed to discharge to the exterior incidental condensation or water penetration]. Air barrier assemblies shall be capable of accommodating substrate movement and of sealing substrate expansion and control joints, construction material changes, and transitions at perimeter conditions without deterioration and air leakage exceeding specified limits.
      1. SUBMITTALS
         1. Product Data: Include manufacturer's written instructions for evaluating, preparing, and treating substrate; technical data; and tested physical and performance properties of air barrier.
         2. Shop Drawings: Show locations and extent of air barrier. Include details for substrate joints and cracks, counterflashing strip, penetrations, inside and outside corners, terminations, and tie-ins with adjoining construction.

Include details of interfaces with other materials that form part of air barrier.

Include details of mockups.

* + - * 1. Product Certificates: For air barriers, certifying compatibility of air barrier and accessory materials with Project materials that connect to or that come in contact with the barrier; signed by product manufacturer.

Coordinate first paragraph below with qualification requirements in Division 1 Section "Quality Requirements" and as supplemented in "Quality Assurance" Article.

* + - * 1. Qualification Data: For Applicator.
        2. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency,   
           for air barriers.
      1. QUALITY ASSURANCE
         1. Manufacturer Qualifications: Minimum of 20 years experience in the production of air barrier materials, with minimum of 5 years in the production of fluid-applied membrane air barriers.

Delete paragraph below if not applicable. If retaining, consider the merits and associated costs of ABAA's Quality Assurance Program before retaining option. ABAA-licensed contractors may not be readily available; verify availability before specifying.

* + - * 1. Applicator Qualifications: A firm experienced in applying air barrier materials similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance [and that is an ABAA-licensed contractor, employs certified and registered installers, and complies with ABAA's Quality Assurance Program] <Insert requirements>.

Delete paragraph and subparagraphs below if not required. If retaining, indicate location, size, and other details of mockups on Drawings or by inserts. Revise wording if only one mockup is required. Retain below with or without "Preconstruction Testing" Article and coordinate requirements.

* + - * 1. Mockups: Before beginning installation of air barrier, build mockups of exterior wall assembly [**shown on Drawings**], [**150 sq. ft. (14 sq. m**)] <**Insert dimensions**>, incorporating backup wall construction, external cladding, window, door frame and sill, insulation, and flashing to demonstrate surface preparation, crack and joint treatment, and sealing of gaps, terminations, and penetrations of air barrier membrane.

Coordinate construction of mockup to permit inspection by Owner's testing agency of air barrier before external insulation and cladding is installed.

Include junction with roofing membrane, [**building corner condition,**] [**and**] [**foundation wall intersection**].

If Architect determines mockups do not comply with requirements, reconstruct mockups and apply air barrier until mockups are approved.

Retain subparagraph below if mockups are erected as part of building rather than separately and the intention is to make an exception to the default requirement in Division 1 Section "Quality Requirements" for demolishing and removing mockups when directed, unless otherwise indicated.

Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

Delete paragraph and subparagraphs below if Work of this Section is not extensive or complex enough to justify a preinstallation conference.

* + - * 1. Preinstallation Conference: Conduct conference at Project site.

Include installers of other construction connecting to air barrier, including roofing, waterproofing, architectural precast concrete, masonry, sealants, windows, glazed curtain walls, and door frames.

Review air barrier requirements including surface preparation, substrate condition and pretreatment, minimum substrate curing period, forecasted weather conditions, special details and sheet flashings, mockups, installation procedures, sequence of installation, testing and inspecting procedures, and protection and repairs.

* + - 1. DELIVERY, STORAGE, AND HANDLING
         1. Store liquid materials in their original undamaged packages in a clean, dry, protected location and within temperature range required by air barrier manufacturer.
         2. Remove and replace liquid materials that cannot be applied within their stated shelf life.
         3. Store rolls according to manufacturer's written instructions.
         4. Protect stored materials from direct sunlight.
      2. PROJECT CONDITIONS
         1. Environmental Limitations: Apply air barrier within the range of ambient and substrate temperatures recommended by air barrier manufacturer. Protect substrates from environmental conditions that affect performance of air barrier. Do not apply air barrier to a damp or wet substrate or during snow, rain, fog, or mist.

1. PRODUCTS
   * + 1. FLUID-APPLIED MEMBRANE AIR BARRIER

Vapor impermeable membranes function as air barriers, and vapor retarders and are usually located on the warm side of primary wall insulation. Because the warm-side location within a wall cross section may be different in cold northern climates than in warm southern climates with air-conditioned interiors, dew point calculations or more sophisticated vapor-flow analyses may be needed to determine location of air barrier.

* + - * 1. Fluid-Applied, Vapor Impermeable Membrane Air Barrier: Two-component, self-curing synthetic-rubber-based membrane, free of solvents, isocyanates and bitumen, suitable for spray application to wet film and dry film thickness   
           of **60 mils (1.5 mm)**.

See Editing Instruction No. 1 in the Evaluations in Division 7 Section "Air Barriers" for cautions about naming manufacturers and products.

Consult ABAA's Web site for a current listing of reviewed air barrier products.

Basis-of-Design Product: Subject to compliance with requirements, provide GCP Advanced Technologies Construction Products; "Perm-A-Barrier Liquid", or a comparable product by one of the following:

Synthetic Membrane:

Henry Company; Air-Bloc [**21 or 21S**] [**21FR**] [**32**].

Rubber Polymer Corporation; Rub-R-Wall Airtight.

<**Insert manufacturer's name; product name or designation.**>

Physical and Performance Properties:

Membrane Air Permeance: Not to exceed **0.0002 cfm x sq. ft. of surface area under a pressure differential of 0.3 inches of water (1.57 lb/sq. ft.)(0.001 L/sq. m of surface area at 75-Pa )**; ASTM E 2178.

Air Barrier Assembly Air Permeance: Not to exceed **0.0008 cfm x sq. ft. under a pressure differential of 0.3 inches of water (1.57 lb. / sq. ft.)(0.004 L/sq. m of surface area at 75-Pa)**; ASTM E 2357.

Water Vapor Permeance: **0.08 perms(4.6 ng/Pa x s x sq. m)**; ASTM E 96 Method B.

Pull Adhesion to CMU: **35 lb/sq. in. (0.24 N/sq. mm)**; ASTM D 4541.

Pull Adhesion to Glass-Faced Gypsum Sheathing: **20 lb/sq. in (0.13 N/sq. mm)**.

VOC Content: Less than 75 g/L.

Elongation: Minimum 500%; ASTM D 412.

Tensile Strength: Minimum 70 psi; ASTM D 412.

Solids Content: 100%.

Retain vapor-permeable air barrier in paragraph and subparagraphs below if air barrier is located on the cold side of primary wall insulation. The cold-side location within a wall cross section may be different in cold northern climates than in warm southern climates with air-conditioned interiors. A separate vapor retarder may also be required at a different location within the wall. See the Evaluations in Division 7 Section "Air Barriers."

* + - * 1. Fluid-Applied, Vapor-Permeable Membrane Air Barrier: Single-component, acrylic-polymer membrane suitable for spray or roller application to wet film thickness of **90 mils (2.3 mm)** and dry film thickness of **45 mils (1.14 mm)**.

See Editing Instruction No. 1 in the Evaluations in Division 7 Section "Air Barriers" for cautions about naming manufacturers and products.

Consult ABAA's Web site for a current listing of reviewed air barrier products.

Basis-of-Design Product: Subject to compliance with requirements, provide GCP Advanced Technologies Construction Products; "Perm-A-Barrier VP" liquid, or a comparable product by one of the following:

Synthetic Polymer Membrane:

Both products in first subparagraph below are polymer emulsions with perm ratings exceeding 10 and VOC contents of 100 g/L.

Henry Company; Air-Bloc 31.

<**Insert manufacturer's name; product name or designation.**>

Physical and Performance Properties:

Membrane Air Permeance: Not to exceed **0.0004 cfm x sq. ft. under a pressure differential of 0.3 inches of water (1.57 lb. / sq. ft.)(0.002 L/sq. m of surface area at 75-Pa )**; on CMU ASTM E 2178.

Air Barrier Assembly Air Permeance: Not to exceed **0.0008 cfm x sq. ft. under a pressure differential of 0.3 inches of water (1.57 lb. / sq. ft.) (0.004 L/sq. m of surface area at 75-Pa)**; ASTM E 2357.

Water Vapor Permeance: **11.2 perms (649.6 ng/Pa x s x sq. m)**; ASTM E 96 Method B.

Peel Adhesion to CMU: **20 lb/sq. in. (0.14 N/sq. mm)**; ASTM D 4541.

Peel Adhesion to Glass-Faced Gypsum Sheathing: **5 lb/sq. in (0.03 N/sq. mm)**.

Pull Adhesion to CMU: **200 lb/sq. in (1.3 N/sq. mm)**.

Pull Adhesion to Glass-Faced Gypsum Sheathing: **11 lb/sq. in (0.08 N/sq. mm)**

VOC Content: Less than 20 g/L.

Elongation: Minimum 300%; ASTM D 412, Die C.

Tensile Strength: Minimum 300 psi; ASTM D 412, Die C.

UV Exposure Limit: 6 months; ASTM D 412.

* + - 1. AUXILIARY MATERIALS
         1. General: Auxiliary materials recommended by air barrier manufacturer for intended use and compatible with air barrier membrane. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

Both types of liquid primer in paragraph below may be used on concrete, masonry, gypsum and wood-based sheathings, metal, and painted substrates.

* + - * 1. Transition Membrane Primer: Liquid [**waterborne**] [**solvent-borne**] primer recommended for substrate by manufacturer of air barrier material when applying flashing and transition membranes directly to substrate.

Basis-of-Design Product: GCP Advanced Technologies Construction Products; "Perm-A-Barrier WB Primer."

Modified bituminous self-adhering strip in paragraph below is used as through-wall flashing.

* + - * 1. Through-Wall Flashing: Modified bituminous, **40-mil- (1.0-mm-)** thick, self-adhering sheet consisting of **32 mils (0.8 mm)** of rubberized asphalt laminated to an **8-mil- (0.2-mm-)** thick, crosslaminated polyethylene film with release liner backing.

Basis-of-Design Product: GCP Advanced Technologies Construction Products; "Perm-A-Barrier Wall Flashing."

Butyl-based self-adhering strip in first paragraph below is used to terminate air barrier to EPDM or TPO roofing membranes.

* + - * 1. Butyl Transition Membrane: Vapor-retarding, **30- to 40-mil- (0.76- to 1.0-mm-)** thick, self-adhering; polyethylene-film-reinforced top surface laminated to layer of butyl adhesive with release liner backing.

Basis-of-Design Product: GCP Advanced Technologies Construction Products; " Ultra."

Modified bituminous self-adhering strip in first paragraph below is used to terminate air barrier to compatible roofing membranes. Verify compatibility with roofing membranes and revise strip material if necessary.

* + - * 1. Modified Bituminous Transition Membrane: Vapor-retarding, **40-mil- (1.0-mm-)** thick, smooth-surfaced, self-adhering; consisting of **36 mils (0.9 mm)** of rubberized asphalt laminated to a **4-mil- (0.1-mm-)** thick polyethylene film with release liner backing.

Basis-of-Design Product: GCP Advanced Technologies Construction Products; "Perm-A-Barrier Detail Membrane."

* + - * 1. Joint Reinforcing Strip: Sheathing manufacturer's glass-fiber-mesh tape.
        2. Substrate Patching Membrane: Manufacturer's standard trowel-grade substrate filler.
        3. Adhesive and Tape: Air barrier manufacturer's standard adhesive and pressure-sensitive adhesive tape.
        4. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, [**0.0187 inch (0.5 mm)**] [**0.0250 inch (0.64 mm)**] <Insert dimension> thick, and Series 300 stainless-steel fasteners.

Foam sealant in paragraph below is used to fill gaps at penetrations and openings.

* + - * 1. Sprayed Polyurethane Foam Sealant: 1- or 2-component, foamed-in-place, polyurethane foam sealant, **1.5 to 2.0 lb/cu. ft (24 to 32 kg/cu. m)** density; flame spread index of 25 or less according to ASTM E 162; with primer and noncorrosive substrate cleaner recommended by foam sealant manufacturer.
        2. Retain one or more of first two paragraphs below for materials to seal air barrier terminations with windows, doors, curtain walls, and storefront systems. Retain first paragraph if using a vapor-retarding, modified bituminous transition strip. Retain second paragraph if using a preformed silicone-sealant extrusion.Modified Bituminous Transition Membrane: Vapor-retarding, **40-mil- (1.0-mm-)** thick, smooth-surfaced, self-adhering; consisting of **36 mils (0.9 mm)** of rubberized asphalt laminated to a **4-mil- (0.1-mm-)** thick polyethylene film with release liner backing.

Basis-of-Design Product: GCP Advanced Technologies Construction Products; "Perm-A-Barrier Detail Membrane."

Products described in paragraph below include Dow Corning Corporation's "123 Silicone Seal," GE Silicones' "UltraSpan US1100," Pecora Corporation's "Sil-Span," and Tremco Incorporated's "Spectrem EZ Seal."

* + - * 1. Preformed Silicone-Sealant Extrusion: Manufacturer's standard system consisting of cured low-modulus silicone extrusion, sized to fit opening widths, with a single-component, neutral-curing, Class 100/50 (low-modulus) silicone sealant for bonding extrusions to substrates.

Revise paragraph below to specify another compatible joint sealant if required. Polysulfide or polyurethane joint sealants may be incompatible with bituminous sheet materials or with bituminous-based materials on adjoining surfaces.

* + - * 1. Joint Sealant: ASTM C 920, single-component, neutral-curing silicone; Class 100/50 (low-modulus), Grade NS, Use NT related to exposure, and, as applicable to joint substrates indicated, Use O. Comply with Division 7 Section "Joint Sealants."

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance.

Verify that substrates are sound and free of oil, grease, dirt, excess mortar, or other contaminants.

Verify that concrete has cured and aged for minimum time period recommended by air barrier manufacturer.

Verify that concrete is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.

Verify that masonry joints are flush and completely filled with mortar.

Proceed with installation only after unsatisfactory conditions have been corrected.

* + - 1. SURFACE PREPARATION
         1. Clean, prepare, treat, and seal substrate according to manufacturer's written instructions. Provide clean, dust-free, and dry substrate for air barrier application.
         2. Mask off adjoining surfaces not covered by air barrier to prevent spillage and overspray affecting other construction.
         3. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
         4. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids in concrete with substrate patching membrane.
         5. Remove excess mortar from masonry ties, shelf angles, and other obstructions.
         6. At changes in substrate plane, apply sealant or termination mastic beads at sharp corners and edges to form a smooth transition from one plane to another.
         7. Cover gaps in substrate plane and form a smooth transition from one substrate plane to another with stainless-steel sheet mechanically fastened to structural framing to provide continuous support for air barrier.
      2. JOINT TREATMENT
         1. Concrete and Masonry: Prepare, treat, rout, and fill joints and cracks in substrate according to ASTM C 1193 and air barrier manufacturer's written instructions. Remove dust and dirt from joints and cracks complying with ASTM D 4258 before coating surfaces.

Prime substrate and apply a single thickness of preparation coat strip extending a minimum of **3 inches (75 mm)** along each side of joints and cracks. Apply a double thickness of air barrier membrane and embed a joint reinforcing strip in preparation coat.

* + - * 1. Gypsum Sheathing: Fill joints greater than **1/4 inch (6 mm)** with sealant according to ASTM C 1193 and with air barrier manufacturer's written instructions. Apply first layer of fluid air barrier membrane at joints. Tape joints with joint reinforcing strip after first layer is dry. Apply a second layer of fluid air barrier membrane over joint reinforcing strip.
      1. TRANSITION MEMBRANE INSTALLATION

Revise this Article to coordinate with drawing details. Sheet or liquid seal materials should be placed over a firm backing to provide structural support for achieving an effective and permanent air barrier.

* + - * 1. Install strips, transition membrane, and auxiliary materials according to air barrier manufacturer's written instructions to form a seal with adjacent construction and maintain a continuous air barrier.

Coordinate the installation of air barrier with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.

Install [butyl] [modified bituminous] transition membrane on roofing membrane or base flashing so that a minimum of **3 inches (75 mm)** of coverage is achieved over both substrates.

* + - * 1. Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by air barrier sheet in same day. Reprime areas exposed for more than 24 hours.

Delete subparagraph below if glass-fiber-surfaced gypsum sheathing is not used.

Prime glass-fiber-surfaced gypsum sheathing with number of prime coats needed to achieve required bond, with adequate drying time between coats.

* + - * 1. Connect and seal exterior wall air barrier membrane continuously to roofing membrane air barrier, concrete below-grade structures, floor-to floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings, using accessory materials [as indicated].
        2. At end of each working day, seal top edge of strips and transition membranes to substrate with termination mastic.
        3. Apply joint sealants forming part of air barrier assembly within manufacturer's recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
        4. Wall Openings: Prime concealed perimeter frame surfaces of windows, curtain walls, storefronts, and doors. Apply [modified bituminous transition membrane] [preformed silicone-sealant extrusion] so that a minimum of **3 inches (75 mm)** of coverage is achieved over both substrates. Maintain **3 inches (75 mm)** of full contact over firm bearing to perimeter frames with not less than **1 inch (25 mm)** of full contact.

Retain one of two subparagraphs below, depending on option selected in paragraph above.

Modified Bituminous Transition Membrane: Roll firmly to enhance adhesion.

Preformed Silicone-Sealant Extrusion: Set in full bed of silicone sealant applied to walls, frame, and membrane.

* + - * 1. Fill gaps in perimeter frame surfaces of windows, curtain walls, storefronts, and doors, and miscellaneous penetrations of air barrier membrane with foam sealant.

Retain paragraph below if strips and transition strips will follow installation of projecting interior wythe masonry ties or joint reinforcement.

* + - * 1. Seal strips and transition membranes around masonry reinforcing or ties and penetrations with termination mastic.

Retain first option in first paragraph below if flashings are nonmetallic; retain second option for metal through-wall flashings.

* + - * 1. Seal top of through-wall flashings to air barrier with an additional **6-inch- (150-mm-)** wide, [**modified bituminous transition membrane**] [**through-wall flashing**].
        2. Seal exposed edges of strips at seams, cuts, penetrations, and terminations not concealed by metal counterflashings or ending in reglets with termination mastic.
        3. Repair punctures, voids, and deficient lapped seams in strips and transition membranes. Slit and flatten fishmouths and blisters. Patch with transition membranes extending **6 inches (150 mm)** beyond repaired areas in membrane direction.
      1. AIR BARRIER MEMBRANE INSTALLATION
         1. Apply air barrier membrane to form a seal with strips and transition membranes and to achieve a continuous air barrier according to air barrier manufacturer's written instructions.
         2. Apply air barrier membrane within manufacturer's recommended application temperature ranges.

Retain one or both paragraphs and subparagraphs below if priming of substrates is required; verify requirements with manufacturer.

* + - * 1. Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by air barrier sheet in same day. Reprime areas exposed for more than 24 hours.

Delete subparagraph below if glass-fiber-surfaced gypsum sheathing is not used.

Prime glass-fiber-surfaced gypsum sheathing with number of prime coats needed to achieve required bond, with adequate drying time between coats.

* + - * 1. Apply a continuous unbroken air barrier to substrates according to the following minimum thickness. Apply membrane in full contact around protrusions such as masonry ties.

Retain one of two subparagraphs below. Verify minimum thickness recommended by manufacturers; recommended thickness may vary with substrate.

Vapor-Impermeable Membrane Air Barrier: [**60-mil (1.5-mm) wet film thickness, 60-mil (1.5-mm) dry film thickness**] [**40-mil (1.0-mm) wet film thickness, 40-mil (1.0-mm) dry film thickness**] [**120-mil (3.0-mm) wet film thickness, 120-mil (3.0-mm) dry film thickness**] <**Insert dimension**>.

Vapor-Permeable Membrane Air Barrier: **90-mil (2.4-mm)** wet film thickness, **45-mil (1.2-mm)** minimum dry film thickness.

Retain one or both options in first paragraph below. Most manufacturers overlap membrane to previously placed strip and transition strip; GCP Advanced Technologies applies strip and transition strip over cured membrane. Verify manufacturer's current recommendations.

* + - * 1. Apply [strip and transition membrane a minimum of **1 inch (25 mm)** onto cured air membrane] [or] [strip and transition membrane over cured air membrane overlapping **3 inches (75 mm)** onto each surface] according to air barrier manufacturer's written instructions.
        2. Do not cover air barrier until it has been tested and inspected by Owner's testing agency.
        3. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air barrier components.
      1. FIELD QUALITY CONTROL

Coordinate test and inspection requirements in this Article with input from Owner's testing agency.

* + - * 1. Testing Agency: Owner will engage a qualified testing agency to perform inspections and prepare inspection reports.
        2. Inspections: Air barrier materials and installation are subject to inspection for compliance with requirements. Inspections may include the following:

Retain list of inspections below if required for Contractor's information.

Continuity of air barrier system has been achieved throughout the building envelope with no gaps or holes.

Continuous structural support of air barrier system has been provided.

Masonry and concrete surfaces are smooth, clean and free of cavities, protrusions, and mortar droppings.

Site conditions for application temperature and dryness of substrates have been maintained.

Maximum exposure time of materials to UV deterioration has not been exceeded.

Surfaces have been primed, if applicable.

Laps in strips and transition membranes have complied with minimum requirements and have been shingled in the correct direction (or mastic has been applied on exposed edges), with no fishmouths.

Termination mastic has been applied on cut edges.

Strips and transition membranes have been firmly adhered to substrate.

Compatible materials have been used.

Transitions at changes in direction and structural support at gaps have been provided.

Connections between assemblies (membrane and sealants) have complied with requirements for cleanliness, preparation and priming of surfaces, structural support, integrity, and continuity of seal.

All penetrations have been sealed.

* + - * 1. Remove and replace deficient air barrier components and reinspect as specified above.
      1. CLEANING AND PROTECTION
         1. Protect air barrier system from damage during application and remainder of construction period, according to manufacturer's written instructions.

Protect air barrier from exposure to UV light and harmful weather exposure as required by manufacturer. [Remove and replace vapor-impermeable air barrier exposed for more than 60 days.] [Remove and replace vapor-permeable air barrier exposed for more than 180 days.]

Protect air barrier from contact with creosote, uncured coal-tar products, TPO, EPDM, flexible PVC membranes, and sealants not approved by air barrier manufacturer.

* + - * 1. Clean spills, stains, and soiling from construction that would be exposed in the completed work using cleaning agents and procedures recommended by manufacturer of affected construction.
        2. Remove masking materials after installation.