SECTION 061656 - AIR- AND WATER-RESISTIVE SHEATHING BOARD

1. GENERAL
   1. RELATED DOCUMENTS

Note to Specifier - Retain or delete this article in all Sections of Project Manual.

* + 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
  1. SUMMARY
     1. Section Includes:
        1. Vapor-permeable, air- and water-resistive wall sheathing.
        2. Site-fluid-applied, vapor-permeable air barrier flashing.
        3. Accessories.
     2. Related Requirements:

Note to Specifier - Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified elsewhere.

* + - 1. Section 04 20 00 - Unit Masonry
      2. Section 04 26 13 - Masonry Veneer
      3. Section 05 40 00 - Cold-Formed Metal Framing
      4. Section 06 10 00 - Rough Carpentry
      5. Section 06 10 53 - Miscellaneous Rough Carpentry
      6. Section 06 16 00 - Sheathing
      7. Section 07 25 00 - Weather Barriers
      8. Section 09 29 00 - Gypsum Board
  1. DEFINITIONS

Note to Specifier - Retain terms that remain after this Section has been edited for a project.

* + 1. Air barrier Accessory: A transitional component of the air barrier that provides continuity.
    2. Air barrier Assembly: The collection of ABs and accessories applied to an opaque wall, including joints and junctions to abutting construction, to control air movement through the wall.
    3. Air barrier Material (AB): Air tight barrier made of material that is relatively air impermeable but moisture vapor permeable, with sealed joints and penetrations, and with terminations sealed to adjacent surfaces.
    4. Material Transitions: Areas where the WRB/AB fiberglass-mat gypsum sheathing connects to beams, columns, slabs, parapets, foundation walls, roofing systems, and at the interface of dissimilar materials.
    5. Rough Openings: Openings in the wall to accommodate windows and doors.
    6. Weather-Resistant Barrier (WRB): Water-shedding barrier made of material that is moisture-resistant, and installed to shed water, with sealed joints and penetrations, and with terminations sealed to adjacent surfaces.
  1. ADMINISTRATIVE REQUIREMENTS
     1. Coordination:
        1. Coordinate installation of board product air barriers with framing installation and subsequent operations that impact finished envelope air barrier work.
        2. Coordinate installation of joint sealants with cleaning of joint sealant substrates and other operations that may impact installation or finished joint sealant work.

Note to Specifier - Retain "Preinstallation Conference" Paragraph below if Work of this Section is extensive or complex enough to justify a conference.

* + 1. Preinstallation Conference: Conduct conference at **[Project site] <Insert location>.**
       1. Review board product air barrier accessory materials installation, including joints between sheathing boards and transitions to abutting construction including air barriers work of other Sections. Review requirements for forming and sealing penetrations of air barrier by other trades.
       2. Review requirements for each type of air barrier product and installation, project and manufacturer's details, mockups, testing and inspection requirements, and coordination and sequencing of air barrier work with work of other Sections.
       3. Review manufacturer's written instructions for meeting Project requirements for substrates specified, including three-dimensional video model demonstrating proper application of components at wall openings.
  1. ACTION SUBMITTALS
     1. Product Data: For each type of air barrier product assembly and accessory. Indicate assembly component materials and dimensions and include construction and application details.
        1. Include data for framing preparation instructions and recommendations.
        2. Include data for substrate preparation instructions and recommendations.
        3. Include data for air- and water-resistive sheathing board assembly product data.
        4. Include standard drawings illustrating manufacturer's written installation and finishing instructions applicable to Project, including details for joints, counterflashings, penetrations, terminations, and tie-ins to adjacent construction.
     2. Shop Drawings: For locations and extent of WRB/AB system.
        1. Include details of typical conditions, special joint conditions, and intersections with other building envelope systems and materials.
        2. Include counter flashings and details showing bridging of envelope at substrate changes.
        3. Detail sealing penetrations, and flashing around windows and doors.
  2. INFORMATIONAL SUBMITTALS

Note to Specifier - Coordinate "Qualification Data" Paragraph below with qualification requirements in Section 014000 "Quality Requirements" and as may be supplemented in "Quality Assurance" Article.

* + 1. Qualification Data: For Installer, testing agency, and manufacturer.
    2. Manufacturer Product Certificates: Indicate compliance with requirements of specified products under Performance Requirements or indicated on Drawings.

Note to Specifier - Retain "Fire-Propagation Characteristics Certificate" Paragraph below if air barrier is part of a wall assembly required to comply with NFPA 285.

* + 1. Fire-Propagation Characteristics Certificate: From a qualified testing agency, documentation that air barrier system as a component of a wall assembly has been tested or engineered to pass NFPA 285. Include system classification number of testing agency on Shop Drawings.

Note to Specifier - Retain "Product Certificates" Paragraph below to require submittal of product certificates from manufacturers.

* + 1. Product Certificates: Indicate compliance with requirements of specified products in "Performance Requirements" Article or as indicated on Drawings.
    2. Product Test Reports: For each air barrier product, and air- and water-resistive sheathing board assembly, for tests performed by a qualified testing agency.
    3. Sample Warranties: For manufacturer’s warranties.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: A qualified air barrier manufacturer experienced in manufacture of air barrier as one of its principal products.
     2. Installer Qualifications: An experienced entity that employs applicators trained in application of specified products.

Note to Specifier - Retain "Testing Agency Qualifications" Paragraph below if Contractor selects testing agency or if Contractor is required to provide services of a qualified testing agency in "Field Quality Control" Article.

* + 1. Testing Agency Qualifications: Qualified independent agency experienced in installing specified waterproofing system, and qualified to perform observation and inspection specified in "Field Quality Control" Article to determine Installer's compliance with the requirements of this Project. Testing agency to be acceptable to Architect and retained by the [**Contractor**] [**Owner**].
    2. Mockups: Provide air barrier mockup application within mockups required in other Sections, or if not specified, in an area of not less than 64 sq. ft. (5.9 sq. m) of wall surface where directed by Architect for each type of backup wall construction. Include examples of surface preparation, crack and joint treatment, air barrier application, and flashing, transition and termination conditions. Build mockups to set quality standards for materials and execution.
       1. Include air barrier system tie-in details between walls and roof, and with wall and foundation wall. Include penetrations and openings.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Deliver materials in original, unopened packaging and store in an enclosed shelter providing protection from damage and exposure to the elements.
        1. Store within temperature limits required by manufacturer.
        2. Store air- and water-resistive sheathing board supported on risers on a flat platform.
        3. Comply with manufacturer's written instructions requirements for safety and handling.
     2. Discard liquid materials that cannot be applied within their stated shelf life.
     3. Store accessory materials in a location with constant ambient temperatures of 40 to 80 deg F (4 to 27 deg C).
  2. FIELD CONDITIONS
     1. Cold Weather Conditions:
        1. Site Fluid-Applied, Vapor-Permeable Joint Flashing: Comply with manufacturer's cold weather application written instructions when atmospheric temperatures or substrate surface temperatures are less than 40 deg F (4 deg C).
        2. Accessories and Sealants: Comply with manufacturer’s cold weather application instructions when atmospheric temperatures or substrate surface temperatures are less than 40 deg F (4 deg C).
     2. Exposure: Comply with manufacturer’s limitations on exposure of applied product.
        1. Do not apply air barrier joint flashing to sheathing surface that is frozen or has frost.
     3. Protect adjacent substrates from environmental conditions that affect air barrier performance
     4. Coordinate installation of membrane air barrier with completion of roofing, below grade, factory fluid-applied membrane portion to site fluid-applied membrane portion and other work requiring interface with air barrier.
     5. Schedule work for inspection of air barrier applications prior to concealment.
     6. Ensure ABs are cured before covering with other materials.
  3. WARRANTY

Note to Specifier - When warranties are required, verify with Owner's counsel that warranties stated in this article are not less than remedies available to Owner under prevailing local laws.

* + 1. Manufacturer's Warranty for Air Barrier Products: See manufacturer's published limited warranty.
       1. Warranty Period for Air- and Water-Resistive Sheathing Board Assembly: Ten years from date of purchase of the product.

Note to Specifier - Consult PROSOCO representative for available special project warranty terms and conditions.

* + 1. Manufacturer's Warranty for Site Fluid-Applied Air Barrier Products: Manufacturer agrees to furnish and install AB to repair or replace those materials installed according to manufacturer's written instructions that exhibit material defects or otherwise fail to perform as a water-resistive barrier and air barrier, as defined in the 2015 IBC and the IECC, under normal use within specified warranty period.
       1. Manufacturer will, at its option, replace nonconforming Product or refund the purchase price of quantity of product shown to be nonconforming.
       2. Access for Repair: Provide air barrier system manufacturer with unimpeded pre- and post-occupancy access to Project facility and air barrier system for purposes of testing, leak investigation, and repair, and to reinstall removed cladding materials upon completion of repair.
       3. Warranty Period: Five years from date of Substantial Completion.
    2. Manufacturer warranties specified in this article exclude deterioration or failure of ABs from the following:
       1. Movement of the structure caused by structural settlement or stresses on the air barrier exceeding manufacturer's written instructions for elongation.
       2. Mechanical damage caused by outside agents.

1. PRODUCTS
   1. MAterials
      1. Source Limitations: Obtain fluid-applied flashing materials and air barrier accessories from single source from single manufacturer.

Note to Specifier - "VOC Content" Paragraph below applies to LEED 2009 NC, CI, and CS Credit IEQ 4.2.

LEED 2009 VOC content requirement for "Architectural Sealants" is 250 g/L or less while VOC content of "Coatings" is 50 g/L or less, according to 40 CFR 59, Subpart D (EPA Metho24).

VOC content requirements are applicable to air barrier flashing material.

* + 1. VOC Content: [**250**] [**50**] g/L or less.

Note to Specifier - "VOC Content" and "Low-Emitting Materials" paragraphs below applies to LEED 2009 for Schools and LEED v4.

LEED v4 EQ Credit "Low-Emitting Materials." Exterior-applied products for Healthcare and Schools. Adhesives, sealants, coatings, roofing, and waterproofing materials applied on-site must meet the VOC limits of California Air Resources Board (CARB) 2007 Suggested Control Measure for SCAQMD Rule 1168, effective July 1, 2005. Small containers of adhesives and sealants subject to state or Federal consumer product VOC regulations are exempt.

Projects outside the United States and Canada may use either the jurisdictional VOC content requirements or comply with the European Decopaint Directive (2004/42/EC, to be updated to most current version when available) Phase II, for water-borne coatings, as analyzed according to ISO 11890 Parts 1 and 2, instead of CARB and SCAQMD regulatory standards.

* + 1. VOC Content: 100 g/L or less.
    2. Low-Emitting Materials: Fluid-applied flashing and accessories shall comply with testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
  1. PERFORMANCE REQUIREMENTS
     1. Air- and Water-Resistive Performance: Air- and water-resistive board assembly and seals with adjacent construction shall be capable of performing as a continuous air barrier system and as a water resistive barrier flashed to direct incidental water to wall exterior, and interface with adjacent building air barrier system components.
        1. Air- and Water-Resistive Board Assemblies: Capable of accommodating substrate movement and of sealing substrate expansion and control joints, construction material changes, penetrations and transitions at perimeter conditions without deterioration and air-leakage exceeding specified limits.
     2. Air Permeance of Sheathing: Maximum 0.004 cfm/sq. ft. (0.02 L/s/sq. m) of surface area at 1.57 lbf/sq. ft. (75 Pa), when tested according to ASTM E 2178.

Note to Specifier - Generally, retain "Air barrier and Water-Resistive Board Assembly Air Leakage" Paragraph below. Air-leakage value below is maximum permitted by the IBC, IECC, and ABAA. See the Evaluations.

* + 1. Air- and Water-Resistive Board Assembly Air Leakage: Maximum 0.004 cfm/sq. ft. (0.02 L/s x sq. m) of surface area at 1.57 lbf/sq. ft. (75 Pa), when tested according to ASTM E 2357.

Note to Specifier - Retain "Water Penetration under Static Pressure" Paragraph below for static-pressure method.

* + 1. Water Penetration under Static Pressure: Test according to ASTM E 331, as follows:
       1. No evidence of water penetration through air barrier board assembly when tested according to a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than 2.86 lbf/sq. ft. (137 Pa).

Note to Specifier - When designing the permeability layers of the exterior envelope, note that air- and water-resistive sheathing board systems on the market have markedly different system perm ratings ranging from 0.5 to 25 perms. The Georgia-Pacific DensElement™ Barrier System rating is 25 perms or more.

* + 1. Water Vapor Permeance; Panel Assembly: 25 perms (1149 ng/Pa x s x sq. m) or more as tested according to ASTM E 96/E 96M, Procedure B.

Note to Specifier - Retain "Fire-Resistance-Rated Assemblies" Paragraph below where air barrier and water-resistive board is part of fire-resistance-rated assemblies. Indicate design designations of specific assemblies on Drawings.

* + 1. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by a qualified testing agency.
    2. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
       1. Flame-Spread Index: 25 or less.
       2. Smoke-Developed Index: 450 or less.

Note to Specifier - Retain "Fire Propagation Characteristics" Paragraph below only if products specified are part of a fire-resistance-rated assembly. Indicate rating, testing agency, and testing agency's design designation on Drawings. Consult PROSOCO representative for details of tested systems.

* + 1. Fire Propagation Characteristics: Provide air- and water-resistive board assembly qualified as a component of a comparable wall assembly that has been tested or engineered to pass NFPA 285.
  1. WALL SHEATHING
     1. Air- and Water-Resistive Sheathing Board: ASTM C 1177/C 1177M, glass-mat-faced gypsum sheathing board.

Note to Specifier - DensElement™ Barrier System is a combination of Georgia-Pacific DensElement™ sheathing and PROSOCO’s "FastFlash Fluid-Applied Flashing."

* + - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia-Pacific Gypsum LLC; DensElement® Barrier System or a comparable product by one of the following:
         1. <Insert manufacturer's name>.
      2. Board Thickness: 5/8 inch (15.9 mm) thick.
      3. Board Type: Type X.

Note to Specifier - SI (metric) module dimensions are not readily obtainable; verify availability by special order with manufacturer.

Boards 48 inches (1219 mm) or 1200 mm wide can be installed horizontally but are usually installed vertically; edges must be protected by a WRB or must be sealed.

* + - 1. Board Size: 48 by 96 inches (1219 by 2438 mm) for vertical and horizontal installations.
      2. Air- and water-resistive Flashing Thickness: Minimum 16 mils (0.41 mm) wet film thickness.
      3. Physical and Performance Properties:
         1. Air Permeance; ASTM E 2178: Maximum 0.004 cfm/sq. ft. (0.02 L/s x sq. m) of surface area at 1.57-lbf/sq. ft. (75-Pa) pressure difference.
         2. Water Vapor Permeance: 25 perms (574 ng/Pa x s x sq. m) or more when tested according to ASTM E 96/E 96M, Procedure B.
         3. Combustion Characteristics; ASTM E 84: Class A.
         4. Board Product Antifungal Properties; ASTM D 3273: 10; zero defacement.
         5. VOC Content - Fluid-Applied Flashing: 50 g/L or less.
         6. UV and Weathering Resistance: Maximum 12-month exposure.
  1. AIR BARRIER ACCESSORY MATERIALS
     1. General: Provide compatible air barrier accessory materials furnished or recommended by air barrier manufacturer as required by Project conditions to produce a complete air barrier assembly identical to tested assemblies meeting performance requirements.
     2. Joint Backing: See Section 079200 "Joint Sealants" for backing materials.
     3. Primer: Liquid primer recommended by air barrier manufacturer for exposed gypsum core edges.
        1. Basis-of-Design Product: Subject to compliance with requirements, provide PROSOCO, Inc.; PorousPrep Sealer.
        2. Color: Blue.
     4. Fluid-Applied Air Barrier Flashing: Site-applied for application to joints, fasteners, penetrations, openings and material transitions.
        1. Basis-of-Design Product: Subject to compliance with requirements, provide PROSOCO, Inc.; FastFlash Fluid-applied Flashing.
        2. Color: Red.
     5. Flashing and Transition Strip: Preformed silicone extrusion, 24 mils (0.61 mm) thick.
        1. Basis-of-Design Product: Subject to compliance with requirements, provide PROSOCO, Inc.; SureSpan EX.
  2. FASTENERS
     1. Screws for Fastening Board Product Air barriers to Cold-Formed Metal Framing: Steel drill screws, ASTM C 1002, in length recommended by sheathing manufacturer for sheathing thickness.
     2. Screws for Fastening Board Product Air barriers to Wood Framing: Wood screws, ASTM C 1002, in length recommended by sheathing manufacturer for sheathing thickness.

1. EXECUTION
   1. EXAMINATION
      1. Framing Examination: Examine framing to determine if work is ready to receive board product air barriers.
         1. Verify that surface flatness tolerances and framing spacing comply with Project requirements.
         2. Verify that adequate support is provided for sheathing board edges.
         3. Proceed with work once conditions comply with manufacturer's written instructions.
      2. Adjacent Substrate Examination: Prior to installation of accessory materials, examine adjacent substrates to receive transition treatment.
         1. Verify that substrates are sound and free of contaminants, adequately cured or aged, compatible with proposed transition materials, and free of obstructions or impediments that would result in failure of transition adhesion and failure of air barrier assembly to perform according to Project requirements.
         2. Verify that concrete and masonry surfaces are visibly dry, cured, and free from release agents, curing agents, and other contaminates.
            1. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
         3. Verify that masonry joints are filled with mortar and struck flush.
      3. Proceed with installation once conditions comply with manufacturer's written instructions and only after unsatisfactory conditions have been corrected.
   2. PREPARATION
      1. Clean, prepare, and treat portions of work not requiring sheathing board substrate according to air barrier manufacturer's written instructions.
         1. Mask adjacent finished surfaces.
         2. Remove contaminants and film-forming coatings from substrates.
         3. Remove projections and excess materials; fill voids with substrate patching material.
         4. Prepare and treat joints and cracks in substrate according to air barrier manufacturer's written instructions.
      2. Joints: Fill gaps greater than 1/8 inch (3 mm) with a backer rod prior to applying fluid-applied flashing. Seal gaps with fluid-applied flashing approved by sheathing manufacturer.
   3. INSTALLATION OF AIR- AND WATER-RESISTIVE SHEATHING BOARDS
      1. Discard each air- and water-resistive sheathing board with damage that compromises continuity or impairs performance as an air barrier, and is unable to be repaired according to manufacturer's written repair instructions.
         1. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
      2. Comply with ASTM C 1280, GA-253, and manufacturer's written instructions.
         1. Fasten sheathing boards to [**wood**] [**cold-formed metal**] framing with specified screws in pattern indicated.
         2. Install sheathing boards with a 1/4-inch- (6.4-mm-) gap where they abut masonry or similar materials that might retain and transmit moisture to them.
      3. Cut sheathing boards at penetrations, edges, and other obstructions of work to allow for application of air barrier accessory materials. Fit sheathing boards closely against abutting construction.
      4. Install sheathing boards with long dimension perpendicular or parallel to framing. Abut ends and edges of sheathing boards centered over face of framing members. Offset sheathing boards joints by not less than one stud spacing.
         1. Apply sheathing boards in pieces sized to provide minimum number of joints and optimum sheathing board arrangement. Arrange joints so that pieces do not span between fewer than three support members.
         2. Do not bridge building expansion joints; cut and space edges of sheathing boards to match spacing of structural support elements.
      5. Space fasteners maximum 8 inches (203 mm) o.c. and set back a minimum of 3/8 inch (905 mm) from edges and ends of sheathing boards and as required in indicated fire-resistance-rated designs.
         1. Apply fasteners so heads are seated flush to board product air barrier membrane surface without breaking or punching through the surface.
            1. Treat all countersunk fasteners that penetrate through fiberglass with specified fluid-applied flashing used for sealing joints.
         2. Securely attach sheathing boards to substrate by fastening as indicated, complying with the following:

Note to Specifier - Retain one of first two subparagraphs below, as required to comply with requirements of Project and local codes.

* + - * 1. Table 2304.9.1, "Fastening Schedule," in the IBC.
        2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in the ICC's International Residential Code for One- and Two-Family Dwellings.
        3. ICC-ES evaluation report for fastener.

Note to Specifier - Retain subparagraph below if using wood framing. Revise to indicate other kinds of nails if required.

* + - 1. Use common galvanized wire nails. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.

Note to Specifier - Retain subparagraph below if using steel stud framing. Revise to indicate other kinds of screw fasteners if required.

* + - 1. Use corrosion resistant sheet metal screw fasteners. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections.
    1. Coordinate wall sheathing boards installation with flashing and air barrier accessory material installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
  1. INSTALLATION OF SITE FLUID-APPLIED AIR BARRIER FLASHING
     1. General: Apply site fluid-applied AB at joints, fasteners, penetrations, openings, and material transitions to achieve a continuous air barrier according to air barrier manufacturer's written instructions. Apply site fluid-applied AB within manufacturer's recommended application temperature ranges.
     2. Apply extrusion flashing material in full contact with substrate to produce a continuous seal according to air barrier manufacturers written instructions.
        1. Vapor-Permeable Air barrier: Total wet film thickness as recommended in writing by manufacturer to meet performance requirements, but not less than 16 mils (0.41 mm) wet film thickness, applied in one or more equal coats by roller, spray, trowel, or knife.
     3. Do not cover air barrier until it has been tested and inspected by Owner's testing agency.
     4. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air barrier components.
  2. INSTALLATION OF AIR BARRIER ACCESSORY MATERIALS
     1. General: Install accessory materials according to air barrier manufacturer's written instructions and AAMA 714. Install AB to adjacent components of building air barrier system, including, but not limited to, roofing system air barrier, exterior fenestration systems, door framing, and other openings.
     2. Apply primer according to manufacturer's written installation instructions.
     3. Seal punctures, voids, and seams. Patch with fluid-applied flashing extending 1 inch (26 mm) beyond repaired areas.
     4. Seal wall penetrations according to manufacturer's written installation instructions and recommendations.
     5. Connect and seal exterior wall air barrier continuously to subsequently-installed 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.

Note to Specifier - Retain "Wall Openings Transition Assembly Installation" Paragraph below when using Tremco's ETA assembly at aluminum-framed wall openings; coordinate with requirements in corresponding Division 08 openings Sections.

* + 1. Wall Openings Transition Assembly Installation: Apply opening transition assembly so that a minimum of 2 inches (51 mm) of coverage is achieved over adjacent sheathing board substrate.
       1. Apply window manufacturer's recommended silicone joint sealant bedding bead to aluminum frame and mechanically attach transition assembly aluminum race to aluminum frame.
       2. Embed transition assembly in continuous application of fluid-applied flashing on sheathing board surface.
    2. Rough Openings: Apply bead of fluid-applied flashing to inside corners first, followed by application to jambs, header, sill, and adjacent sheathing.
    3. Flashings: Seal top of through-wall flashings to air barrier with fluid-applied flashing.
  1. FIELD QUALITY CONTROL
     1. Testing Agency: Owner may engage a qualified testing agency to perform tests and inspections.
        1. Inspections: ABs, accessories, and installation are subject to inspection for compliance with requirements and photograph documentation of conditions to be concealed by subsequent Work.
     2. Tests: As determined by Owner's testing agency from among the following tests:
        1. Qualitative Air-Leakage Testing: Test air barrier assemblies for air leakage according to ASTM E 1186, smoke pencil with pressurization or depressurization or ASTM E 1186, chamber pressurization or depressurization with smoke tracers.

Note to Specifier - Retain "Quantitative Air-Leakage Testing" Subparagraph below if testing to quantify air-leakage rate is required.

* + - 1. Quantitative Air-Leakage Testing: Test air barrier assemblies for air leakage according to ASTM E 783.

Note to Specifier - Retain "Testing" Subparagraph below if wall air barrier testing is described in Division 01 performance requirements or envelope commissioning Section; revise to suit Project.

* + - 1. Testing: See [Section 019113 "General Commissioning Requirements"] [Section 019119.43 "Exterior Enclosure Commissioning"] for additional testing and inspection requirements.
    1. Air- and water-resistive sheathing board will be considered defective if it does not pass tests and inspections.
    2. Prepare test and inspection reports.
  1. CLEANING AND PROTECTING
     1. Clean spills, stains, and overspray resulting application using cleaning agents recommended by manufacturers of affected construction. Remove masking materials.
     2. Protect air barrier from damage from subsequent work. Protect materials from exposure to UV light for period in excess of that acceptable to air barrier manufacturer; replace overexposed materials and retest.

END OF SECTION 061656