SECTION 07 25 00 – WEATHER RESISTIVE BARRIER / AIR BARRIER

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes but is not limited to:

1. Weather resistive barrier (WRB) and air barrier (AB)
2. Flexible flashing
3. Wall penetration flashing panels
4. Corner flashing
5. Primer
6. Weatherbarrier tape
7. Sealant
8. Fasteners

B. Related Requirements:

1. Section 01 45 00 “Air Barrier System Coordination”
2. Section 07 46 00 "Siding" for rain screen system integral with weather resistive barrier/air barrier.
3. Section 07 62 00 “Sheet Metal Flashing and Trim” for flashing and saddles.
4. Section 07 92 00 “Joint Sealants” for sealants used in conjunction with weather resistive
5. barrier/air barrier.
6. Section 08 32 13 “Sliding Vinyl Framed Glass Doors”
7. Section 08 53 13 “Vinyl Windows” for window flange shims and mesh underlayment

1.3 SUBMITTALS

A. Product Data: For each type of product.

1. For building wrap, include data on air and water-vapor permeance based on testing according to referenced standards.

B. Shop Drawings: Show details of building wrap at terminations, openings, and penetrations. Show details of flexible flashing applications.

C. Evaluation Reports: For water-resistive barrier and flexible flashing, from ICC-ES.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain all system components from a single source from a single manufacturer.

B. Compatibility of components: Verify compatibility of all components used in weather barrier system.

C. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Notify Architect and weather resistive barrier/air barrier manufacturer's representative minimum two weeks in advance of mockup.
2. Mockup to be constructed as a free standing assembly to remain in place until referenced work is complete and removal is approved. Mockup will not remain as part of the finished work.
3. Include the following elements in the mockups:

    a. Exterior wall framing.
    b. Simulated foundation condition.
    c. Roof to exterior wall condition.
    d. Exterior sheathing.
    e. Weather resistive barrier/air barrier details including but not limited to: foundation to wall, roof to wall, wall to windows and doors, mechanical and plumbing penetrations, electrical penetrations including device boxes, flashings and through wall flashings.
    f. Rain screen spacer and drainage materials.
    g. Typical exterior window and exterior door.
    h. Exterior siding materials including inside corners, outside corners, diverter flashings and foundation terminations.
    i. Typical exterior mechanical wall penetrations including exhaust vents, pipes, packaged terminal heat pumps, hose bibs and louvers.
    j. Typical exterior electrical wall penetrations including exterior lighting, meter boxes, utility boxes, conduit and wires.
    k. Typical exterior structural wall penetrations including ledgers, beams and nailed or bolted connectors.

4. Protect accepted mockups from the elements with weather-resistant membrane.
5. Approval of mockups is for quality of installation, coordination with other materials, and aesthetic qualities.
6. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Architect in writing.

D. Pre-installation Conferences: Conduct conference at Project site before and after construction of the mock-up.

E. Manufacturer's field representative to provide on-site training of installers to ensure proper use and installation of weather barrier / air barrier materials.

1.5 WARRANTY

A. Manufacturer's Warranty: Manufacturer's project specific warranty in which weather resistive barrier / air barrier manufacturer agrees to pay the cost of materials and labor for the following:

1. Replacement of weather resistive barrier / air barrier products that do not comply with specified performance.
2. Correction of problems caused solely by failure of weather resistive barrier / air barrier products.

B. Warranty Period: 10 years from purchase date of products.

PART 2 - PRODUCTS

2.1 WATER-RESISTIVE BARRIER

A. Building Wrap: ASTM E 1677, Type I air barrier; with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, when tested according to ASTM E 84; UV stabilized; and acceptable to authorities having jurisdiction.

1. Products: Subject to compliance with requirements, provide products by the following:
    a. Fortifiber Building Systems Group; Weathersmart Commercial WRB.
        1) Water-Vapor Permeance: Not less than 14 perms (460 ng/Pa x s x sq. m) per ASTM E 96/E 96M, Desiccant Method (Procedure A).
        2) Air Permeance: Not more than 0.004 cfm/sq. ft. at 0.3-inch wg (0.02 L/s x sq. m at 75 Pa) when tested according to ASTM E 2178.
        3) Allowable UV Exposure Time: Not less than twelve months.
        4) Flame Propagation Test: Materials and construction shall be as tested according to NFPA 285.

B. Building-Wrap Tape: Pressure-sensitive plastic tape recommended by building-wrap manufacturer for sealing joints and penetrations in building wrap.

2.2 FLEXIBLE FLASHING

A. Fortifiber System

1. Self-Adhering Membrane Flashing: Composite, self-adhesive, flashing product consisting of a pliable, rubberized-asphalt compound, bonded to a high-density polyethylene film.

    a. Products: Subject to compliance with requirements, provide the following:
        1) Sill Flashing: Fortifiber Building Systems Group; Fortiflash 40, 40 mil overall thickness.
        2) Head and Jamb Flashing: Fortifiber Building Systems Group; Fortiflash 25, 25 mil overall thickness.
        3) Flashing at Ledgers, Beams and Nailed or Bolted Structural Connectors: Fortifiber Building Systems Group; Fortiflash 40, 40 mil overall thickness.

b. Lap Adhesion: Not less than 9.3 lb. per inch when tested in accordance with ASTM D-903.
c. Puncture Resistance: Not less than 40 lbf. when tested in accordance with ASTM E-154.

2. Self-Adhering Butyl Membrane Flashing: Composite, self-adhesive, flashing product consisting of a pliable butyl compound, bonded to a high-density polyethylene film. High temperature resistance, adhesion and flexability.

a. Products: Fortifiber Butyl Self-Adhering flashing.

3. Window Sill Corner Flashing: Preformed polyolefin membrane.

a. Products: Subject to compliance with requirements, provide the following:

1) Fortifiber Building Systems Group; Moistop Corner Shield.
2) Water Resistance: Not less than 48 hours when tested in accordance with ASTM D-779.

4. High Temperature Self-Adhering Membrane Flashing. As indicated in Section 07 62 00 “Sheet Metal Flashing and Trim”.

2.3 WALL PENETRATION FLASHING PANELS

A. Wall Penetration Flashing Panels: Pre-manufactured flashing panel for plumbing, electrical and HVAC penetrations consisting of polyethylene panels with thermoplastic elastomeric weatherproof seals.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Quickflash Weatherproofing Products; Quickflash Weatherproofing Flashing Panels.
b. Approved substitutions.

2. Provide appropriate model and size for plumbing, electrical and HVAC penetrations of the air and weather resistive barrier / air barrier.

2.4 MISCELLANEOUS MATERIALS

A. Sealant: As specified in Section 07 92 00 "Joint Sealants."

B. Primer for Self-Adhering Membrane Flashing: Product recommended in writing by flexible flashing manufacturer for substrate.

1. 3M; Super 77 Multipurpose Adhesive.
2. Henry; Aquatec Primer

C. Nails and Staples:

1. Product recommended in writing by flexible flashing manufacturer and complying with ASTM F 1667.
2. Cap nails at field areas of weather resistive barrier.

PART 3 - EXECUTION

3.1 WEATHER RESISTIVE BARRIER INSTALLATION

A. Cover exposed exterior surface of sheathing with weather resistive barrier/air barrier securely fastened to framing immediately after sheathing is installed.

B. Cover sheathing with weather resistive barrier/air barrier as indicated on Drawings and as follows:

1. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer recommendations. Overlap vertical seams a minimum of 12” inches and horizontal seams a minimum of 6” inches.
2. Start weather barrier / air barrier installation at a building corner, leaving 12 inches of weather barrier extended beyond corner to overlap
3. Install weather barrier in a horizontal manner starting at the lower portion of the wall surface with subsequent layers installed in a shingling manner to overlap lower layers.
4. Maintain weather barrier plumb and level.
5. Seal seams, edges, fasteners, and penetrations with tape.
6. Install weather resistive barrier with cap fasteners, unless otherwise covered with furring strips.
7. Return weather resistive barrier and air barrier into sill, jamb and head areas of openings as detailed on Drawings, with a combination of self adhered membrane, mechanically adhered membrane, additional weather resistive barrier strips, tape and sealant.
8. Lap weather resistive barrier/air barrier over vertical leg of through-wall flashings to shed moisture.
9. Seal any tears or cuts as recommended by manufacturer.
10. Seal bottom of weather resistive barrier/air barrier to foundation as detailed on Drawings.
11. Seal top of weather resistive barrier/air barrier to top plate and ceiling construction as detailed on Drawings.
12. All fasteners to be covered with furring, ledgers or tape. If fastener is exposed use tape to cover or use cap fastener.

3.2 FLEXIBLE FLASHING INSTALLATION

A. Apply flexible flashing as indicated on Drawings and as follows:

1. Comply with manufacturer's written instructions.
2. Prime substrates prior to application of self-adhering membrane flashing.
3. Isolate flashing materials from other building materials that could affect durability or adhesion of flashing products.
4. Lap seams and junctures with other materials at least 4 inches except that at flashing flanges of other construction, laps need not exceed flange width.
5. Lap flashing over weather resistive barrier at bottom and sides of openings.
6. Lap weather resistive barrier over flashing at heads of openings.
7. After self-adhering membrane flashing has been applied, roll surfaces with a hard rubber or metal roller to ensure that flashing is completely adhered to substrates.

B. Apply flexible flashing at inside and outside corners.

1. Apply nine (9) inch wide vertical strips of 25 mil flexible flashing at inside and outside corners of building, from sill plate to underside of roof framing, leaving four and one-half (4 ½) inches on each side of the corners.

C. Apply flexible flashing beneath ledgers and above sills.

1. Apply 40 mil flexible flashing at wall mounted ledgers and at door and window sills.

D. Use High Temperature flexible flashing at locations indicated in Section 07 62 00 “Sheet Metal Flashing and Trim”

3.3 WALL PENETRATATION FLASHING PANEL INSTALLATION

A. Install flashing panels in accordance with manufacturer’s written instructions.

B. Plumbing, Electrical and HVAC Flashing Panels

1. Select flashing panel required for specific penetration size and type.
2. Push flashing panel over penetration with label facing to exterior to form weatherproof seal around pipe.
3. Nail flashing panels to walls with corrosion-resistant nails at top of panels.
4. Slide weather resistive barrier under bottom flange of flashing panel.
5. Cut WRB at top of flashing panel creating a 45 degree ‘keystone’ flap.
6. Flash sides of panel with 4 inch strips of flexible flashing, over edge of flashing panel and onto WRB at sides.
7. Flash top of panel with 4 inch strip of flexible flashing to sheathing. Top of panel flashing to continue beyond side flashing 1 inch each side.
8. Fold ‘keystone’ flap in WRB down and lap over the top of the flashing panel and flexible flashing at top of panel.
9. Seal all free edges of WRB with recommended tape.

3.4 AIR BARRIER ASSEMBLY INSTALLATION

A. Install all components of weather barrier system as required to provide a continuous air barrier assembly throughout the weather barrier/ air barrier system.

1. Continuity of air-barrier system has been achieved throughout the weather barrier/air barrier system.
2. Termination mastic or tape has been applied on all cut edges.
3. Strips and transition strips have been firmly adhered to substrate.
4. Compatible materials have been used.
5. Metal flashings have been sealed on both sides. Bed flashing in sealant to air-barrier material underneath and tape to air-barrier material above.
6. All penetrations have been sealed.

3.5 CLEANING AND PROTECTION

A. Protect weather barrier/air barrier system from damage during application and remainder of construction period, according to manufacturer’s written instructions.

1. Protect weather barrier/air barrier from exposure to UV light and harmful weather exposure as required by manufacturer. If exposed to these conditions for more than recommended time period, remove and replace weather barrier/air barrier or install additional thickness air barrier after repairing and preparing the overexposed membrane according to manufacturer's written instructions.
2. Protect weather barrier/air barrier from contract with incompatible materials and sealants not approved by weather barrier/air barrier manufacturer.

B. 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

END OF SECTION 07 25 00