

SECTION 07250
WEATHER BARRIERS
DuPont™ Tyvek® CommercialWrap®

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Weather barrier membrane
- B. Seam Tape
- C. Flashing
- D. Fasteners

1.2 REFERENCES

- A. ASTM International
 - 1. ASTM C920; Standard Specification for Elastomeric Joint Sealants
 - 2. ASTM C1193; Standard Guide for Use of Joint Sealants
 - 3. ASTM D882; Test Method for Tensile Properties of Thin Plastic Sheeting
 - 4. ASTM D1117; Standard Guide for Evaluating Non-woven Fabrics
 - 5. ASTM E84; Test Method for Surface Burning Characteristics of Building Materials
 - 6. ASTM E96; Test Method for Water Vapor Transmission of Materials
 - 7. ASTM E1677; Specification for Air Retarder Material or System for Framed Building Walls
 - 8. ASTM E2178; Test Method for Air Permeance of Building Materials
- B. AATCC – American Association of Textile Chemists and Colorists
 - 1. Test Method 127 Water Resistance: Hydrostatic Pressure Test
- C. TAPPI
 - 1. Test Method T-410; Grams of Paper and Paperboard (Weight per Unit Area)
 - 2. Test Method T-460; Air Resistance (Gurley Hill Method)

1.3 SUBMITTALS

- A. Refer to Section 013300 Submittal Procedures.
- B. Product Data: Submit manufacturer current technical literature for each component.
- C. Samples: Weather Barrier Membrane, minimum 8-1/2 inches by 11 inch.
- D. Quality Assurance Submittals
 - 1. Design Data, Test Reports: Provide manufacturer test reports indicating product compliance with indicated requirements.
 - 2. Manufacturer Instructions: Provide manufacturer's written installation instructions.
 - 3. Manufacturer's Field Service Reports: Provide site reports from authorized field service representative, indicating observation of weather barrier assembly installation.
- E. Closeout Submittals
 - 1. Refer to Section 01700 Project Closeout

2. Weather Barrier Warranty: Manufacturer's executed warranty form with authorized signatures and endorsements indicating date of Substantial Completion.

1.4 QUALITY ASSURANCE

A. Qualifications

1. Installer shall have experience with installation of weather barrier assemblies under similar conditions.
2. Installation shall be in accordance with weather barrier manufacturer's installation guidelines and recommendations.
3. Source Limitations: Provide weather barrier and accessory materials produced by single manufacturer.

B. Mock-up

1. Install mock-up using approved weather barrier assembly including fasteners, flashing, tape and related accessories per manufacturer's current printed instructions and recommendations.
 - a. Mock-up size: 10 feet by 10 feet.
 - b. Mock-up Substrate: Match wall assembly construction, including window opening.
 - c. Mock-up may remain as part of the work.
2. Contact manufacturer's designated representative prior to weather barrier assembly installation, to perform required mock-up visual inspection and analysis as required for warranty.

C. Pre-installation Meeting

2. Hold a pre-installation conference, two weeks prior to start of weather barrier installation. Attendees shall include Contractor, Architect, Installer and Weather Barrier Manufacturer's Designated Representative.
3. Review all related project requirements and submittals, status of substrate work and preparation, areas of potential conflict and interface, availability of weather barrier assembly materials and components, installer's training requirements, equipment, facilities and scaffolding, and coordinate methods, procedures and sequencing requirements for full and proper installation, integration and protection.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Refer to Section 01631 Products and Substitutions.
- B. Deliver weather barrier materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Store weather barrier materials as recommended by weather barrier manufacturer.

1.6 SCHEDULING

- A. Review requirements for sequencing of installation of weather barrier assembly with installation of windows, doors, louvers and flashings to provide a weather-tight barrier assembly.
- B. Schedule installation of weather barrier materials and exterior cladding within nine months of weather barrier assembly installation.

1.7 WARRANTY

- A. Refer to Section [01 78 36 Warranties] [insert section number and title].
- B. Special Warranty
 - 1. Special weather-barrier manufacturer's warranty for weather barrier assembly for a period of ten (10) years from date of final weather barrier installation.
 - 2. Approval by weather barrier manufacturer for warranty is required prior to assembly installation.
 - 3. Warranty Areas: [Describe specific areas of work protected and areas of work excluded as required by project conditions].

PART 2 - PRODUCTS

2.1 WEATHER BARRIER

- A. A non-perforated, nonwoven, non-absorbing, breathable membrane that resists air flow, bulk water and wind driven rain and channels water and moisture to the outside of the building envelope. It has microscopic pores that allow moisture vapor to escape from inside walls.
- B. Physical Properties
 - 1. Spunbonded polyolefin membrane.
- C. Performance Characteristics:
 - 1. Air Penetration: 0.001 cfm/ft² at 75 Pa, when tested in accordance with ASTM E2178. Type I per ASTM E1677.
 - 2. Water Vapor Transmission: 28 perms, when tested in accordance with ASTM E96, Method B.
 - 3. Water Penetration Resistance: Minimum 280 cm when tested in accordance with AATCC Test Method 127.
 - 4. Basis Weight: Minimum 2.7 oz/yd², when tested in accordance with TAPPI Test Method T-410.
 - 5. Air Resistance: Air infiltration at >1500 seconds, when tested in accordance with TAPPI Test Method T-460.
 - 6. Tensile Strength: Minimum 38/35 lbs/in., when tested in accordance with ASTM D882, Method A.
 - 7. Tear Resistance: 12/10 lbs., when tested in accordance with ASTM D1117.
 - 8. Surface Burning Characteristics: Class A, when tested in accordance with ASTM E84. Flame Spread: 10, Smoke Developed: 10.

2.2 ACCESSORIES

- A. Seam Tape: As recommended by the weather barrier manufacturer.
 - 1. Nail Caps: #4 nails with large 1-inch plastic cap fasteners.
- C. Sealants
 - 1. Refer to Section 07900 Joint Sealants.
 - 2. Provide sealants that comply with ASTM C920, elastomeric polymer sealant to maintain watertight conditions.
 - 3. Products: Sealants recommended by the weather barrier manufacturer.
- D. Adhesives:
 - 1. Provide adhesive recommended by weather barrier manufacturer.

2. Products: Adhesives recommend by the weather barrier manufacturer.

E. Primers:

1. Provide flashing manufacturer recommended primer to assist in adhesion between substrate and flashing.

2. Products: Primers recommended by the flashing manufacturer.

F. Flashing

1. Flexible membrane flashing materials for window openings and penetrations recommended by manufacturer.

2. Straight flashing membrane materials for flashing windows and doors and sealing penetrations such as masonry ties, etc. recommended by manufacturer.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify substrate and surface conditions are in accordance with weather barrier manufacturer recommended tolerances prior to installation of weather barrier and accessories.

3.2 INSTALLATION – WEATHER BARRIER

A. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer recommendations.

B. Install weather barrier prior to installation of windows and doors.

C. Start weather barrier installation at a building corner, leaving 6-12 inches of weather barrier extended beyond corner to overlap.

D. 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. Maintain weather barrier plumb and level.

E. Sill Plate Interface: Extend lower edge of weather barrier over sill plate interface 3-6 inches. Secure to foundation with elastomeric sealant as recommended by weather barrier manufacturer.

F. Window and Door Openings: Extend weather barrier completely over openings.

G. Overlap weather barrier

1. Exterior corners: minimum 12 inches.

2. Seams: minimum 6 inches.

H. Weather Barrier Attachment:

1. Attach weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturer recommend fasteners, space 12-18 inches vertically on center along stud line, and 24 inch on center, maximum horizontally.

I. Apply flashing to weather barrier membrane prior to installing cladding anchors.

3.3 SEAMING

A. Seal seams of weather barrier with seam tape at all vertical and horizontal overlapping seams.

B. Seal any tears or cuts as recommended by weather barrier manufacturer.

3.4 OPENING PREPARATION (for use with non-flanged windows - all cladding types)

- A. Flush cut weather barrier at edge of sheathing around full perimeter of opening.
- B. Cut a head flap at 45-degree angle in the weather barrier at window head to expose 8 inches of sheathing. Temporarily secure weather barrier flap away from sheathing with tape.

3.5 FLASHING (for use with non-flanged windows - all cladding types)

- A. Cut flexible flashing a minimum of 12 inches longer than width of sill rough opening.
- B. Cover horizontal sill by aligning flexible flashing edge with inside edge of sill. Adhere to rough opening across sill and up jambs a minimum of 6 inches. Secure flashing tightly into corners by working in along the sill before adhering up the jambs.
- C. Fan flexible flashing at bottom corners onto face of wall. Firmly press in place. Mechanically fasten fanned edges.
- D. Apply 9-inch wide strips of flashing at jambs. Align flashing with interior edge of jamb framing. Start flashing at head of opening and lap sill flashing down to the sill.
- E. Spray-apply primer to top 6 inches of jambs and exposed sheathing.
- F. Install flexible flashing at opening head using same installation procedures used at sill. Overlap jamb flashing a minimum of 2 inches.
- G. Coordinate flashing with window installation.
- H. On exterior, install backer-rod in joint between window frame and flashed rough framing. Apply sealant at jambs and head, leaving sill unsealed. Apply sealants in accordance with sealant manufacturer's instructions and ASTM C1193.
- I. Position weather barrier head flap across head flashing. Adhere using flashing over the 45-degree seams.
- J. Tape top of window in accordance with manufacturer recommendations.
- K. On interior, install backer rod in joint between frame of window and flashed rough framing. Apply sealant around entire window to create air seal. Apply sealant in accordance with sealant manufacturer's instructions and ASTM C1193.

3.6 OPENING PREPARATION (for use with flanged windows)

- A. Cut weather barrier in a modified "I-cut" pattern.
 - 1. Cut weather barrier horizontally along the bottom of the header.
 - 2. Cut weather barrier vertically 2/3 of the way down from top center of window opening.
 - 3. Cut weather barrier diagonally from bottom of center vertical cut to the left and right corners of the opening.
 - 4. Fold side and bottom weather barrier flaps into window opening and fasten.
- B. Cut a head flap at 45-degree angle in the weather barrier at window head to expose 8 inches of sheathing. Temporarily secure weather barrier flap away from sheathing with tape.

3.7 FLASHING (for use with flanged windows)

- A. Cut flexible flashing a minimum of 12 inches longer than width of sill rough opening.
- B. Cover horizontal sill by aligning flexible flashing edge with inside edge of sill. Adhere to rough opening

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across sill and up jambs a minimum of 6 inches. Secure flashing tightly into corners by working in along the sill before adhering up the jambs.

- C. Fan flexible flashing at bottom corners onto face of wall. Firmly press in place. Mechanically fasten fanned edges.
- D. On exterior, apply continuous bead of sealant to wall or backside of window mounting flange across jambs and head. Do not apply sealant across sill.
- E. Install window according to manufacturer's instructions.
- F. Apply strips of flashing at jambs overlapping entire mounting flange. Extend jamb flashing 1-inch above top of rough opening and below bottom edge of sill flashing.
- G. Apply strip of flashing as head flashing overlapping the mounting flange. Head flashing should extend beyond outside edges of both jamb flashings.
- H. Position weather barrier head flap across head flashing. Adhere flashing over the 45-degree seams.
- I. Tape head flap in accordance with manufacturer recommendations.
- J. On interior, install backer rod in joint between frame of window and flashed rough framing. Apply sealant around entire window to create air seal. Apply sealant in accordance with sealant manufacturer's instructions and ASTM C 1193.

3.8 FIELD QUALITY CONTROL

- A. Notify manufacturer's designated representative to obtain [required] periodic observations of weather barrier assembly installation.

3.9 PROTECTION

- A. Protect installed weather barrier from damage.

END OF SECTION