

SECTION 07 27 26

FLUID-APPLIED WEATHER BARRIER SYSTEM

PART 1 - GENERAL

1.1 SUMMARY:

- A. Work of this section includes window and door flashing, air and water-resistive barrier membrane system, and accessory materials for application to exterior building envelope substrates unless indicated otherwise on the drawings and specifications.
- B. Related work:
 - 1. 04 22 00 - Concrete Unit Masonry
 - 2. 06 10 00 – Rough Carpentry
 - 3. 07 62 00 - Sheet Metal flashing
 - 4. 07 92 00 - Joint Sealants
 - 5. 08 11 13 - Hollow Metal Doors & Frames
 - 6. 08 43 13 - Aluminum Storefronts
 - 7. 09 29 00 – Drywall: Exterior Sheathing

1.2 PERFORMANCE REQUIREMENTS:

- A. Performance requirements: Comply with the specified performance requirements and characteristics as herein specified.
- B. Performance description:
 - 1. The building envelope shall be constructed with a continuous, air and water-resistive barrier to control water and air leakage into and out of the conditioned space.
 - 2. Joints, penetrations and paths of water and air infiltration shall be made watertight and airtight.
 - 3. System shall be capable of withstanding positive and negative combined wind, stack and HVAC pressures on the envelope without damage or displacement.
 - 4. System shall be installed in an airtight and flexible manner, allowing for the relative movement of systems due to thermal and moisture variations.

1.3 SUBMITTALS:

- A. Product data: Submit manufacturer's product data including membrane and accessory material types, technical and test data, composition, descriptions and properties, installation instructions and substrate preparation requirements.
- B. Shop Drawings: Provide Installation Guideline Illustrations.

1.4 QUALITY ASSURANCE:

- A. Applicable standards, as referenced herein: ASTM International (ASTM).

- B. Manufacturer's qualifications: Air and water-resistive barrier systems shall be manufactured and marketed by a firm with a minimum of five (5) years experience in the production and sales of air and water-resistive barrier system. Manufacturers proposed for use, but not named in these specifications, shall submit evidence of ability to meet all requirements specified, and include a list of projects of similar design and complexity completed within the past five years.
- C. Installer's qualifications: The installer shall demonstrate qualifications to perform the work of this section by submitting the following:
 - 1. Verification that installer has been trained by and is approved to perform work as herein specified by air and water-resistive barrier system manufacturer.
 - 2. A firm experienced in applying similar materials on similar size and scoped projects.
 - 3. Evidence of proper equipment and trained field personnel to successfully complete the project.
- D. Inspection and testing: Cooperate and coordinate with the Owner's inspection and testing agency. Do not cover installed products or assemblies until they have been inspected, tested and approved.
- E. Sole source: Obtain materials from a single manufacturer.
- F. Regulations: Provide products which comply with all state and local regulations controlling use of volatile organic compounds (VOC).
- G. Pre-installation conference: Prior to beginning installation of air and water-resistive barrier system, hold a pre-installation conference to review work to be accomplished.
 - 1. Contractor, Architect, installing subcontractor, membrane system manufacturer's representative, and all subcontractors who have materials penetrating membrane system or finishes covering membrane system shall be present.
 - 2. Contractor shall notify Architect at least seven days prior to time for conference.
 - 3. Contractor shall record minutes of meeting and distribute to attending parties.
 - 4. Agenda: As a minimum discuss:
 - a. Surface preparation.
 - b. Substrate condition and pretreatment.
 - c. Minimum curing period.
 - d. Special details and sheet flashing.
 - e. Sequence of construction, responsibilities, and schedule for subsequent operations.
 - f. Installation procedures.
 - g. Inspection procedures.
 - h. Protection and repair procedures.
 - i. Review and approval of all glazing applications.
 - 5. Applicator to prepare a mockup of system at an opening, showing all aspects of the weather barrier system.
- H. Mock-up:
 - 1 Prior to installation of the weather and air barrier system a field-constructed mock-up shall be applied to verify details and tie-ins, to demonstrate the required installation.

- a. Construct a typical exterior wall section, 8 feet long and 8 feet wide, incorporating back-up wall, cladding, window, door frame, sill, penetrations, insulation, flashing and any other critical junction.
- b. Allow 72 hours for inspection and testing of mock-up before proceeding with weather and air barrier work.
- c. Coordinate construction of mockups to permit inspection by Architect of air barrier before beginning installation.
- d. Approved, undamaged mock-up must remain as part of the work.

1.5 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver materials and products in labeled packages. Store and handle in strict compliance with manufacturer's instructions and recommendations. Protect from damage, weather, excessive temperatures and construction operations. Remove damaged material from site and dispose of in accordance with applicable regulations.
- B. Protect air and water-resistive barrier components from freezing and extreme heat.
- C. Sequence deliveries to avoid delays, and to minimize on-site storage.

1.6 PROJECT CONDITIONS:

- A. Weather conditions: Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials used.
 - 1. Apply at surface and ambient temperatures recommended by the manufacturer. See manufacturer's product data sheets for best practices.
 - 2. Proceed with installation only when the substrate construction and preparation work are complete and in condition to receive the membrane system.
 - 3. Exposure limitations: Schedule work to ensure that air and water-resistive barrier system is covered and protected from UV exposure within 180 days of installation. If air and water-resistive barrier membrane system cannot be covered within 180 days after installation, apply temporary UV protection as recommended by membrane manufacturer.

1.7 WARRANTY:

- A. Manufacturer's warranty requirements: Submit manufacturer's written warranty stating that installed air and water-resistive barrier materials are watertight, free from defects in material and workmanship, and agreeing to replace defective materials and components.
- B. Warranty period: Five years from Date of Substantial Completion.

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PART 2 – PRODUCTS

2.1 MANUFACTURER:

- A. PROSOCO, Inc, 3741 Greenway Circle, Lawrence, KS 66046. Phone (800) 255-4255; Fax: (800) 877-2700. E-mail: CustomerCare@prosoco.com
- B. Approved Alternate: AirShield LMP, manufactured by W.R. Meadows (800)-342-5976
- C. Substitutions: Comply with Section 01 60 00.

2.2 R-GUARD GYPPRIME WATER BASED PRIMER FOR RAW GYPSUM BOARD EDGES:

- A. PROSOCO R-GUARD® PorousPrep or equivalent by W.R. Meadows.

Description: PROSOCO R-Guard® PorousPrep seals the dry, cut edges of gypsum wall boards exposed in rough openings for windows and doors. PorousPrep brushes on easily and efficiently. Its glue-like viscosity reduces rundown and potential for spills. PorousPrep usually dries in less than 30 to 60 minutes when applied to dry surfaces. The sealed edge is a perfect surface for easy application of R-Guard Joint & Seam Filler or FastFlash.

- B. Characteristics:
 - 1. Form: light blue viscous liquid, mild odor
 - 2. Specific Gravity: 1.02
 - 3. pH: 9.0
 - 4. Weight per Gallon: 8.49 pounds
 - 5. Active Content: 16 percent
 - 6. Total Solids: 16 percent ASTM-D-2369
 - 7. Volatile Organic Content (VOC): less than 100 grams per Liter
 - 8. Flash point: greater than 212 degrees Fahrenheit (greater than 100 degrees Celsius) ASTM-D-3278
 - 9. Freeze Point: 32 degrees Fahrenheit (0 degrees Celsius)
 - 10. Shelf Life: 2 years in tightly sealed, unopened container
 - 11. VOC: Less than 100 grams per liter.

2.3 R-GUARD FASTFLASH® LIQUID-APPLIED FLASHING MEMBRANE

- A. Acceptable product: PROSOCO R-GUARD® FastFlash® or equivalent by W.R. Meadows.
- B. Description: FastFlash® is a gun-grade waterproofing, adhesive and detailing compound that combines the best of silicone and polyurethane properties. This single component, 99% solids, Silyl-Terminated-Poly-Ether (STPE) is easy to gun, spread and tool to produce a highly durable, seamless, elastomeric flashing membrane in rough openings of structural walls.

- C. Characteristics:
1. Thickness: Apply according to manufacturer's instructions.
 2. Water vapor permeability: Minimum 14 perms when tested in accordance with ASTM E96.
 3. Water penetration (cyclical static air pressure difference): No uncontrolled water penetration when tested in accordance with ASTM E547.
 4. Hardness: Shore A, 40-45 when tested in accordance with ASTM C661.
 5. Tensile strength: 180 psi when tested in accordance with ASTM D412.
 6. Elongation at break: 400% when tested in accordance with ASTM D412.
 7. Peel strength: 25 pli when tested in accordance with ASTM D1781.
 8. Form: Brick Red, Gun Grade Sealant.
 9. Specific gravity: 1.45 to 1.60
 10. pH: not applicable
 11. Weight per gallon: 12.5 pounds
 12. Active content: 99 percent
 13. Total solids: 99 percent
 14. Volatile organic content (VOC): 30 grams per Liter, maximum
 15. Flash point: no data
 16. Freeze point: no data
 17. Shelf life: 1 year in tightly sealed, unopened container

2.4 R-GUARD SPRAY WRAP MVP (MAXIMUM VAPOR PERMEABILITY) AIR AND WATER-RESISTIVE BARRIER

- A. Acceptable product: PROSOCO R-GUARD® MVP or AirShield LMP, manufactured by W.R. Meadows
- B. Description: SPRAY WRAP MVP is a fluid-applied air and water-resistive barrier that stops air and water leakage in cavity wall, masonry veneer construction, as well as in stucco, EIFS and most other building wall assemblies. Once on the substrate, the easily applied liquid quickly dries into a rubberized, highly durable, water-resistant, vapor-permeable membrane.
- C. Characteristics:
1. Thickness: Apply in accordance with manufacturer's instructions. See product data sheet.
 2. Air infiltration: Less than 0.004 cfm per square foot (0.02 L/s/sq m) when tested in accordance with ASTM E2178 or ASTM E283.
 3. Air Barrier Assembly: pass when tested in accordance with ASTM E2357.
 4. Water vapor permeability: Minimum 17 perms when tested in accordance with ASTM E96.
 5. Structural performance: Air and water-resistive barrier system shall withstand positive and negative wind pressure loading when tested in accordance with ASTM E330.
 6. Water penetration (static pressure): No uncontrolled water penetration when tested in accordance with ASTM E331.
 7. Tensile strength: Greater than 15 psi or exceeds strength of substrate when tested in accordance with ASTM C297.
 8. Nail Sealability: pass when tested in accordance with ASTM D1970.
 9. Flexibility: pass when tested in accordance with ASTM D522.
 10. Form: thin, milky batter-like mixture
 11. Specific gravity: greater than 1.31

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12. pH: 7.5 to 10.0
13. Weight per gallon: 12.2 pounds
14. Active content: no data
15. Total solids: 68 to 72 percent by volume, ASTM-D-2369
16. Volatile organic content (VOC): less than 18 grams per Liter
17. Flash point: not applicable
18. Freeze point: 32 degrees Fahrenheit (0 degrees Celsius)
19. Shelf life: 2 years in tightly sealed, unopened container

PART 3 - EXECUTION

3.1 EXAMINATION:

- A. Verify that surfaces and conditions are ready to accept the Work of this section. Notify design professionals in writing of any discrepancies. Commencement of the Work or any parts thereof shall mean acceptance of the prepared substrates.
- B. All surfaces must be sound, clean and free of grease, dirt, excess mortar or other contaminants. Fill or bridge damaged surfaces, voids or gaps larger than one-half (1/2) inch with mortar, wood, metal, sheathing or other suitable material, as necessary. Fill voids and gaps measuring one-half (1/2) inch or less with R-GUARD Joint & Seam Filler as necessary to ensure continuity.
 1. Surfaces to receive R-GUARD MVP may be dry or damp. Do not apply to surfaces which are sufficiently wet to transfer water to the skin when touched. Surfaces must be protected from rain for 2 hours following application.
 2. Surfaces to receive FastFlash[®], Joint & Seam Filler, and AirDam[®] may be dry, damp or wet to the touch. Brush away any standing water which may be present before application. The products will tolerate rain immediately after application
- C. Where curing materials are used they must be clear resin based without oil, wax or pigments
- D. Condition materials to room temperature prior to application to facilitate extrusion and handling.
- E. Prior to installation of veneer at cavity wall construction or metal wall panels with CMU and/or exterior gypsum board sheathing backup, apply fluid-applied moisture barrier on all walls where concealed behind masonry veneer, metal wall panels, or similar material where a cavity is created unless called out otherwise.

3.2 SURFACE PREPARATION:

- A. Air, water-resistive and waterproofing membrane and accessories may be applied to green concrete 16 hours after removal of forms.
- B. Refer to manufacturer's product data sheets for requirements for condition of and preparation of substrates.
 1. Surfaces shall be sound and free of voids, spalled areas, loose aggregate and sharp protrusions.
 2. Remove contaminants such as grease, oil and wax from exposed surfaces.
 3. Remove dust, dirt, loose stone and debris.
 4. Use repair materials and methods that are acceptable to manufacturer of the air and water-resistive barrier system.

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5. The PROSOCO R-GUARD® product line includes several options for preparing structural walls to receive the primary air and water resistive barrier. Refer to manufacturer's product data sheets and R-GUARD Installation Guidelines for additional information.

C. Exterior sheathing:

1. Ensure that sheathing is properly installed with ends, corners and edges properly fastened.
2. Mechanical fasteners used to secure sheathing boards or penetrate sheathing boards shall be set flush with sheathing, fastened and spotted with R-GUARD Joint & Seam Filler and fastened into solid backing.
3. Consolidate and seal the cut edges of gypsum wall boards exposed in rough openings for windows and doors at corners. The treated edge provides a suitable surface for application of R-GUARD Joint & Seam Filler fiber-reinforced coat and seam treatment.

D. Masonry and concrete substrates:

1. Mortar joints on concealed areas where fluid applied cavity wall weather barrier is to be applied must be fully filled with no voids, holes, or cracks, struck flush with the face of CMU.
2. Mechanically remove loose mortar fins, mortar accumulations and protrusions, and debris.

3.3 INSTALLATION OF JOINT TREATMENT(PREPARE):

- A. Before applying complete weather barrier system, read "Preparation" and "Safety Information" sections in the Manufacturer's Product Data Sheet for PROSOCO R-GUARD® MVP. Refer to the Product Data Sheet for additional information about application.
- B. Apply R-GUARD Joint & Seam Filler for seams, joints, cracks, gaps, primed rough gypsum edges at sheathing, rough openings:
 1. Fill or repair cracks larger than one-half inch.
 2. Fill surface defects and over driven fasteners with R-GUARD Joint & Seam Filler.
 3. Using a dry knife, trowel or spatula, tool and spread the product. Spread one inch beyond seam at each side to manufacturer's recommended thickness. See product data sheet.
 4. Allow to skin before installing other waterproofing or air barrier components.
 5. Apply in accordance with manufacturer's Application Guideline illustrations.

3.4 R-GUARD FASTFLASH® FLASHING AT WINDOWS, DOORS, OPENINGS AND PENETRATIONS (PREPARE):

- A. Apply R-GUARD FastFlash® over surfaces prepared with R-GUARD Joint & Seam Filler to seal and waterproof rough openings:
 1. Apply a thick bead of R-GUARD FastFlash® over any visible gaps in the prepared rough opening.
 2. Immediately press and spread the wet product into gaps.
 3. Allow treated surface to skin.
 4. Starting at the top, apply a thick bead of R-GUARD FastFlash® in a zigzag pattern to the structural wall surrounding the rough opening.

5. Spread the wet product to create an opaque, monolithic flashing membrane which surrounds the rough opening and extends 4 to 6 inches over the face of the structural wall. Apply and spread additional product as needed to create an opaque, monolithic flashing membrane free of voids and pin holes.
6. Apply additional product in a zigzag pattern over a structural framing inside the rough opening.
7. Apply R-GUARD FastFlash® within temperature and weather limitations as required by manufacturer.
8. Apply R-GUARD FastFlash® to perimeters, sills and adjacent sheathing and building face, in accordance with manufacturer's product data sheet and R-GUARD Installation Guidelines illustrations.
9. Extend flashing onto building face 4 to 6 inches.
10. Install preparation products in accordance with manufacturer's Application Guideline illustrations.

3.5 R-GUARD AIR & WATER-RESISTIVE BARRIER INSTALLATION (PROTECT)

- A. Apply appropriate R-GUARD air and water-resistive barrier to a clean, dry substrate within temperature and weather limitations as required by manufacturer.
 1. Apply to recommended thickness. Proper thickness is achieved when coating is opaque.
 2. Allow product to cure and dry.
 3. Inspect membrane before covering. Repair any punctures, translucent or damaged areas by applying additional material.
 4. Specifier Note: If air or surface temperature exceed 95 degrees Fahrenheit (35 degrees Celsius), apply to shaded surfaces and before daytime air and surface temperatures reach their peak.
 5. On CMU wall construction back roll as necessary to ensure there are no pinholes, voids or gaps in the membrane.

3.6 R-GUARD FLASHING TRANSITIONS (TRANSITION)

- A. Apply R-GUARD Joint & Seam Filler and R-GUARD FastFlash® as a liquid flashing membrane to waterproof the transitions in rough opening and between dissimilar materials.
 1. Fill any voids between the top of the flashing leg and the vertical wall with R-GUARD Joint & Seam Filler. Tool to direct water from the vertical wall to the flashing.
 2. Apply a generous bead of FastFlash® to the top edge of the flashing leg.
 3. Spread the wet products to create a monolithic "cap-flash" flashing membrane extending 2 inches up the vertical face of the structural wall and 1 inch over the flashing membrane extending. Apply additional product as needed to achieve a void and pinhole free surface. This "liquid termination bar" helps secure the flashing and ensures positive drainage from the wall surface to the flashing.
 4. Allow treated surfaces to skin before installing other wall assembly, waterproofing or air barrier components.

3.7 CURING AND DRYING

- A. Complete drying times vary with temperature, humidity and surface conditions. Protect from rain or freezing until completely dry. At 70°F (21°C) and 50% relative humidity, R-GUARD MVP dries to touch and can be overcoated in 2-4 hours.

END OF SECTION

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