

## SECTION 07 27 26

### VAPOR IMPERMEABLE FLUID-APPLIED AIR BARRIER MEMBRANE

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*This guide specification has been prepared by Polyguard Products Inc., in printed and electronic media, as an aid to specifiers in preparing written construction documents for vapor impermeable, fluid-applied air barrier membranes.*

*Polyguard® Airlok Flex® is a patented, single-component, cold-applied, impermeable, elastomeric, thermoplastic, synthetic rubber coating, waterproofing concrete sealer; designed to prevent air and moisture penetration while protecting concrete, concrete masonry, and gypsum sheathing surfaces. Polyguard® Airlok Flex® is a solvent-based product that can be ordered with a VOC content to meet local requirements: 525, 400, 200, or 100 g/l.*

*Edit entire master document to suit project requirements. Modify or add items as necessary. Delete items which are not applicable. Words and sentences may contain choices to be made regarding inclusion or exclusion of a particular item or statement. This section may include performance-, proprietary-, and descriptive-type specifications. Edit to avoid conflicting requirements. Editor notes to guide the specifier are included between lines of asterisks to assist in choices. Remove these editor notes before final printing of specification.*

*This guide specification is written around the Construction Specifications Institute (CSI) Section Format standards.*

*For specification assistance on specific product applications, please contact our offices or any of our local product representatives throughout the country.*

*Polyguard Products Inc. reserves the right to modify these guide specifications at any time. Updates for this guide specification will be posted on the manufacturer's web site and/or in printed media as they occur. Manufacturer makes no expressed or implied warranties regarding content, errors, or omissions in the information presented.*

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#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Application of liquid-applied, vapor impermeable air barrier.
- C. Materials for:
  - 1. All penetrations through the wall assembly.
  - 2. Connections to foundation walls.
  - 3. Walls, windows, curtain walls, storefronts, louvers or doors.
  - 4. Expansion and control joints.
  - 5. Masonry ties.
  - 6. Wall and roof connections and penetrations.

##### 1.02 RELATED SECTIONS

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*Specifier Notes: Edit the list of related sections as required for the project. List other sections dealing with work directly related to this section.*

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- A. Section 04 20 00 - Unit Masonry.
- B. Section 07 21 00 - Thermal Insulation.
- C. Section 07 50 00 - Membrane Roofing.
- D. Section 07 60 00 - Flashing and Sheet Metal.
- E. Section 07 70 00 - Roof and Wall Specialties and Accessories.
- F. Section 07 80 00 - Fire and Smoke Protection.
- G. Section 07 92 00 - Joint Sealants.

- H. Section 08 10 00 - Doors and Frames.
- I. Section 08 50 00 - Windows.
- J. Section 09 20 00 - Plaster and Gypsum Board.

#### 1.03 REFERENCES

- A. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
- B. ASTM D 1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection – Section 7.9 Nail Sealability
- C. ASTM D 4541 - Standard Test Method for Pull-off Strength of Coatings Using Portable Adhesion Testers
- D. ASTM D 5385-93 (06) - Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes.
- E. ASTM E 84 (94) - Standard Test Method for Surface Burning Features of Building Materials.
- F. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.
- G. ASTM E 2178 (01) - Standard Test Method for Air Permeance of Building Materials.
- H. ASTM E 2357 (05) - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
- I. ICC ES-AC 212 - Acceptance Criteria for Water-Resistive Coatings used as Water-Resistive Barriers on Exterior Sheathing
- J. NFPA 285 – Standard Test Method of determining the flammability characteristics of exterior, non-load bearing wall assemblies/panels.

#### 1.04 SUBMITTALS

- A. Comply with Section 01 33 00 - Submittal Procedures.
- B. Submit manufacturer's product data and application instructions.
- C. Sustainable Design Submittals:
  - 1. Submit invoices and documentation from manufacturer of the amounts of materials and content for products specified.
  - 2. Submit invoices and documentation showing manufacturing locations and origins of materials for products manufactured and sourced within 500 miles of project site.
- D. LEED Submittal: Documentation of materials, recycled content and location of manufacturer.
  - 1. LEED MR Credit 2 – Construction Waste Management: Provide documentation of reusable materials by weight and volume diverted back to manufacturing process or to appropriate sites.
  - 2. LEED, MR Credit 5 – Regional Materials: Provide documentation for cost of materials or products that have been extracted, harvested, recovered, and also manufactured within 500 miles of project site.

- a. If only a portion of the materials or products is extracted, harvested, or recovered and manufactured locally, then only provide percentage by weight for credit value.
- 3. LEED EA Credit 1 - Optimize Energy Performance: Provide documentation verification for materials increasing levels of energy performance above the baseline in the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

#### 1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Fluid-Applied Membrane must be manufactured by a company with a minimum of ten (10) years of experience in the production and sales of air barrier membrane materials.
- B. Applicator Qualifications: A firm having at least three (3) years of experience in applying these types of specified materials and specifically accepted in writing by the membrane system manufacturer.
- C. Materials: For each type of material required to complete the work of this section, provide primary materials which are the products of a single manufacturer.
- D. Pre-Application Conference: A pre-application conference shall be held to establish procedures and to review conditions, installation procedures and coordination with other related work. Meeting agenda shall include review of special details and flashing.
- E. Manufacturer's Representative: Arrange to have trained representative of the manufacturer on site periodically to review installation procedures.

#### 1.06 MOCK-UPS

- A. Prior to installation of air barrier, apply air barrier as mock-up example to verify details under shop drawing submittals and to demonstrate tie-ins with adjoining construction, and other termination conditions, as well as qualities of materials and execution.
- B. Construct typical exterior wall panel, 6 feet long by 6 feet wide, incorporating back-up wall, cladding, window and doorframe and sill, insulation, flashing; illustrating materials interface and seals.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Store materials in a clean, dry area and on a stable surface with the lid securely closed in accordance with manufacturer's instructions and local governing regulations.
- C. Store at temperatures at or above 40°F (5°C), free from contact with cold or frozen surfaces. For best application results, store in ambient temperatures above 50°F (11°C).
- D. Protect materials during handling and application to prevent damage or contamination.

#### 1.08 PROJECT CONDITIONS

- A. Proceed with installation only when substrate construction and preparation work is complete. If necessary, ensure that subsoil is approved by architect or geotechnical firm.
- B. Warn personnel against breathing of vapors and contact with skin and eyes; wear appropriate protective clothing and respiratory equipment.
- C. Keep flammable products away from spark or flame. Post "No Smoking" signs. Do not allow use of spark-producing equipment during application and until all vapors have dissipated.

- D. Maintain work area in a neat and workmanlike condition. Remove empty cartons and rubbish from the site daily.

1.09 WARRANTY

- A. Manufacturer warrants only that this product is free of defects, since many factors which affect the results obtained from this product are beyond our control; such as weather, workmanship, equipment utilized and prior condition of the substrate. We will replace, at no charge, proven defective product within twelve (12) months of purchase, provided it has been applied in accordance with our written directions for uses we recommended as suitable for this product. Proof of purchase must be provided. A five (5) year material or system warranty may be available upon request. Contact Polyguard Products, Inc. for further details.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Polyguard Products Inc. P.O. Box 755 Ennis, TX 75120-0755; Phone: (214) 515-5000 Fax: (972) 875-9425 Email: [info@polyguard.com](mailto:info@polyguard.com)

2.02 DISTRIBUTOR

- A. Bowman Construction Supply 10801 E. 54th Avenue Denver, CO 80239 Phone: (303)696-8960

2.03 MATERIALS

- A. Polyguard® Airlok Flex® [*option: with or without ProBan® mold inhibitor*] VOC level required; [525], [400], [200], [100] air/vapor barrier: single-component; elastomeric; thermoplastic, synthetic rubber; liquid; spray, rolled, or brushed; cold-applied to concrete walls (i.e. poured-in-place, concrete masonry, precast), plywood, oriented strand board (OSB), or exterior-grade gypsum sheathing substrates.
1. Performance-based Specification: Polyguard® Airlok Flex® is a patented, single-component, cold-applied, impermeable, elastomeric, thermoplastic, synthetic rubber coating, waterproofing concrete masonry sealer having the following characteristics:

PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
COLOR		Gray
AIR LEAKAGE & DURABILITY	ASTM E 2357	0.0008 cfm/ft <sup>2</sup>
AIR PERMEANCE – GYPSUM SHEATHING	ASTM E 2178	0.0017 cfm/ft <sup>2</sup>
AIR PERMEANCE –BLOCK	ASTM E 2178	0.00012 cfm/ft <sup>2</sup>
PERMEANCE TO WATER VAPOR TRANSMISSION	ASTM E 96	0.058 Perms
ADHESION	ASTM D 4541	135+ PSI Average
RESISTANCE TO HYDROSTATIC HEAD	ASTM D 5385	231 ft.
TENSILE STRENGTH	ASTM D 412 Modified Die C	387 PSI
ELONGATION	ASTM D 412 Modified Die C	515%
NAIL SEALABILITY	ASTM D 1970	Pass
CRACK BRIDGING	ICC ES-AC 212	Pass
ANTIFUNGAL ACTIVITY MILDEW AND ROT RESISTANCE (Proban®)	AATCC METHOD 30	No visible growth on any film
SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS	ASTM E 84-94; NFPA 255; ANSI 2.5; UL 723 Omega 1995	10 -Flame Spread Index 35 – Smoke Development
EVALUATION OF FIRE PROPAGATION CHARACTERISTICS	NFPA 285	Pass
CATEGORY 1 40 C.F.R.§59.401 "WATERPROOF SEALER TREATMENTS"		Available in 525, 400, 200, or 100 G/L VOC

2.04 ACCESSORIES

- A. Flashing: Polyguard® UV365™ Flashing is a 40-mil, composite membrane, consisting of a foil/polyscrim, laminated to a layer of rubberized-asphalt and is used for wall flashing, through-wall flashing (TWF), and joint flashing, and non-vapor permeable sheet air barrier.

- B. Flashing: Polyguard® UV365™ Ultra Flashing is a 40-mil, laminated, modified-asphalt, self-adhesive flashing membrane bonded to a cross-laminated polyethylene sheet with a top protective layer of aluminum and is used for wall flashing, through-wall flashing (TWF), and joint flashing, and non-vapor permeable sheet air barrier.
- C. Flashing: Polyguard® 400 Flashing is a 40-mil, laminated, modified-asphalt, self-adhesive flashing membrane bonded to a cross-laminated polyethylene sheet and is used for wall flashing, through-wall flashing (TWF), joint flashing, and non-vapor permeable sheet air barrier.
- D. Detail Sealant: Polyguard® Detail Sealant PW™ is a single-component, STPE, 100% solid moisture-cured, elastomeric sealant. It is an environmentally-friendly, non-isocyanate product that replaces silicone and urethane sealants. It is also a low VOC/HAPS free, cold-applied, self-adhesive, elastomeric sealant.
- E. Surface Primer Roller-grade Adhesive:
  - 1. Polyguard® 650 LT Liquid Adhesive: A rubber-based, tacky adhesive which is specifically formulated to provide excellent adhesion.
  - 2. Polyguard® California Sealant: A rubber-based sealant which is specifically formulated to provide excellent adhesion. The VOC (Volatile Organic Compound) content meets the South Coast Air Quality Management District regulations established under the February 1, 1991 version of Rule 1168 ©) (2) Adhesion and Sealant Applications. California Sealant is classified as an Architectural Sealant Primer Porous, with VOC of 527 g/L. Current SCAQMD regulations for this type sealant primer are 775 g/L.
  - 3. Polyguard® Shur-Tac Liquid Adhesive: A polymer emulsion based adhesive which is specifically formulated to provide excellent adhesion.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. All surfaces to be treated must be sound, dry, clean; and free of dirt, excess mortar smears, form release agents, or other contaminants. Masonry substrate to have tooled mortar joints.
- B. Cutouts and breakouts for support columns and beams are to be filled and made flush with the substrate by others prior to commencing work.
- C. Masonry and new concrete shall have been cured a minimum of three (3) days and must be dry at time of application.
- D. Design Professional to verify substrate and conditions are acceptable to commence work within this section. Examine surfaces to receive membrane. Notify Architect if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.

### 3.02 SURFACE PREPARATION

- A. Substrate surfaces must be clean and dry: free of mortar or gypsum smears and form release agents; and free of ice and frost.
- B. Poured concrete ties inside and out must be knocked-off and filled flush.
- C. Masonry wall must be unparged.
- D. Gypsum sheathing voids are to be filled and made flush with substrate.
- E. Open joints are to be filled with foam or Polyguard® Detail Sealant PW™. Tight joints can be coated with Airluk Flex without additional preparation.

- F. Smooth and fill flush rough concrete, surface defects, surface protrusions and voids greater than 1/2" in depth.
- G. For any detail work:
  - a. Install Detail Sealant PW™ or non-shrinking Portland cement grout, per manufacturer's instructions, prior to Airlok Flex application. Allow to dry.
  - b. Install Detail Sealant PW™ either before or after treatment, and allow a minimum of 1 hour to skin over before applying the Airlok Flex coating, adding additional time for lower ambient and surface temperatures. Cure time is less than an hour at 75°F (24°C) and 50% RH.
  - c. Install UV365™ Flashing or UV365™ Ultra Flashing either before Airlok Flex application or after the Airlok Flex application has been allowed to dry for minimum 24 hours. For installation before Airlok Flex application, apply Polyguard® 650 LT Liquid Adhesive primer, California Sealant primer, or Shur-Tac Liquid Adhesive primer at a rate of 250-300 sq. ft. per gallon; apply by roller or sprayer to a cleaned, dust free surface. Allow to become tacky per manufacturer's directions. For ambient and substrate surface temperatures between 25°F (-4°C) and 40°F (5°C), refer to Polyguard's Technical Bulletin on Cold Weather Applications for the flashing installation.
  - d. Install 400 Flashing either before or after the Airlok Flex application has been allowed to dry for minimum 24 hours. For installation before Airlok Flex application, apply Polyguard® 650 LT Liquid Adhesive primer, California Sealant primer, or Shur-Tac Liquid Adhesive primer at a rate of 250-300 sq. ft. per gallon; apply by roller or sprayer to a cleaned, dust free surface. Allow to become tacky per manufacturer's directions. For ambient and substrate surface temperatures between 25°F (-4°C) and 40°F (4°C), refer to Polyguard's Technical Bulletin on Cold Weather Applications for the flashing installation.

### 3.03 APPLICATION OF AIR BARRIER SYSTEM

- A. Install all materials following manufacturer's guide specifications.
- B. Apply Polyguard® Airlok Flex® evenly to substrate in one coat using airless spray equipment with a 3700-to-4000 PSI stall pressure and reversible spray tip 0.037-inch or 0.039-inch, brush, or roller; checking immediately with a wet mil gauge for proper application thickness at 40 square feet per gallon (40 wet mils) on prepared substrates.
- C. Apply extra material at anchor ties and penetrations.
- D. Allow fluid-applied Airlok Flex application to dry for minimum 24 hours and then inspect for continuous coverage. If necessary, apply additional material as needed to provide a continuous coating then allow an additional minimum 24 hours to dry.
- E. Airlok Flex dries to an average thickness of 20 mils, but coverage rates will vary inversely related to substrate texture and porosity.
- F. Polyguard® UV365™ Flashing or UV365™ Ultra Flashing can be applied either before the Airlok Flex membrane has been applied to substrate or after the Airlok Flex membrane has been applied to the substrate and allowed to dry for a minimum 24 hours. Apply Polyguard® 400 Flashing membrane only after the fluid-applied application of Polyguard® Airlok Flex® to substrate and allowed to dry a minimum 24 hours. Fill control and transition joints with 30 mils of Polyguard® Detail Sealant PW™ either before or after the Airlok Flex membrane; tool to 0.5-inch on each side of the joint. Apply Polyguard® 400 Flashing or UV365™ Flashing or UV365™ Ultra Flashing to window and door openings as specified. Cover a minimum 3" onto the wall face and into rough opening. Overlap end and side laps two (2) inches. Roll all flashing to ensure seal. Seal top edge of flashing strips with Polyguard® Detail Sealant PW™. Trowel to feathered edge.

- G. Minor voids are to be filled and sealed with Polyguard® Detail Sealant PW™. Application of Detail Sealant PW can be executed either before or after the application of Airlok Flex. Allow Detail Sealant PW a minimum 1 hour to skin over before covering with the Airlok Flex, adding additional time for lower ambient and surface temperatures. Cure time is less than an hour at 75°F (24°C) and 50% RH.

#### 3.04 MEMBRANE REPAIR

- A. Thoroughly clean and dry the damaged area of Airlok Flex, then recoat. Airlok Flex will bond to itself without any additional surface preparation. Do not apply Airlok Flex over damaged areas of 400 Flashing, but it is permissible as a repair material to be applied over damaged areas of UV365™ Flashing or UV365™ Ultra Flashing.

#### 3.05 PROTECTION

- A. For 24 hours after installation, protect completed membrane system against water filling block cores. Protect finished air barrier system from adjacent work.
- B. Airlok Flex will be adversely affected by prolonged or constant ultraviolet radiation (UV) exposure longer than 6 months. For periods of (UV) exposure greater than 6 months, cover with Airlok Flex VP, Airlok Flex VP LT, Airlok Flex WG, or Airlok Flex WG LT prior to the 6 month term; remove and recoat the exposed Airlok Flex after the 6 month term.

END OF SECTION