

SECTION 07 27 26

VAPOR PERMEABLE, FLUID-APPLIED AIR BARRIER MEMBRANE

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 permeable, fluid-applied air barrier membrane.

The Polyguard® Airlok Flex® VP is a patented, single-component, cold-applied, water-based, vapor-permeable, elastomeric, thermoplastic, synthetic rubber coatings; designed as an above-grade, air-, weather-, and vapor-permeable coating to prevent air and moisture infiltration and exfiltration. Polyguard® Airlok Flex® VP has a low VOC content of 50 g/l which meets local requirements.

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.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Application of liquid-applied, vapor permeable air barrier.
- C. Materials for:
 - a. All penetrations through the wall assembly.
 - b. Connections to foundation walls.
 - c. Walls, windows, curtain walls, storefronts, louvers or doors.
 - d. Expansion and control joints.
 - e. Masonry ties.
 - f. Wall and roof connections and penetrations.

1.02 RELATED SECTIONS

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

- 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.
- D. 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 E 96 - Standard Test Methods for Water Vapor Transmission of Materials.
- E. ASTM E 2178 - Standard Test Method for Air Permeance of Building Materials.
- F. ASTM E 2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
- G. ICC ES-AC 212 - Acceptance Criteria for Water-Resistive Coatings used as Water-Resistive Barriers on Exterior Sheathing
- H. 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. 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; Email: info@polyguard.com

2.02 MATERIALS

- A. Polyguard® Airlok Flex® VP is a fluid-applied, non-combustible, water-based, vapor-permeable blend of high-performance, elastomeric, acrylic polymers and selected fillers.
- a. Performance-based Specification: Air barrier membrane shall be acrylic based, that cures to form a tough, continuous, bonded elastomeric membrane having the following characteristics:

PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
COLOR		Gray Opaque
SERVICE TEMPERATURE RANGE		-25° F to 185° F
AIR PERMEANCE – GYPSUM SHEATHING @ 70 ft ² /gal	ASTM E 2178-01	0.0037 cfm/ft ² @ 75 Pa
AIR PERMEANCE – BLOCK @ 50 ft ² /gal	ASTM E 2178-01	0.003 cfm/ft ² @ 75 Pa
AIR LEAKAGE & DURABILITY	ASTM E 2357	0.002 cfm/ft ² @ 75 Pa
PULL ADHESION	ASTM D 4541	> 100 PSI average
PERMEANCE TO WATER VAPOR TRANSMISSION	ASTM E 96 Method A	2.15 perms
PERMEANCE TO WATER VAPOR TRANSMISSION	ASTM E 96 Method B	10 perms
ELONGATION	ASTM D 412	500%
NAIL SEALABILITY	ASTM D 1970	Pass
EVALUATION OF FIRE PROPOGATION CHARACTERISTICS	NFPA 285	Compliant*
ULTRAVIOLET (UV) RADIATION EXPOSURE LIMIT	BY MANUFACTURER	Up to 1 year
VOLATILE ORGANIC COMPOUNDS (VOC)		< 50 G/L

*Related to specific assemblies

2.03 SYSTEM ACCESSORIES

- A. Flashing and Sealant: Detail Sealant PW™:
Polyguard® Detail Sealant PW™ is a single component, Silyl Terminated Polyether (STPE), 100% solid moisture-cured, elastomeric tube and trowel applied joint filler, sealant and fluid flashing.

- B. Flashing: Polyguard® Airlok® Sheet 400 NP is a 40-mil, laminated, modified-asphalt, self-adhesive 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. Use Airlok® Sheet 400 NP for ambient and substrate surface temperatures 25° F (-4° C) and rising. Airlok® Sheet 400 NP resists sunlight up to 30 days.
- C. Flashing: Polyguard® Airlok® Sheet UV Ultra 400 NP is a 40-mil, laminated, modified-asphalt, self-adhesive membrane bonded to a cross-laminated polyethylene sheet with a top protective layer of aluminum and is used for wall flashing, and joint flashing, and non-vapor permeable sheet air barrier. Use Airlok® Sheet UV Ultra 400 NP for ambient and substrate surface temperatures 40° F (5° C) and rising. Airlok® Sheet UV Ultra 400 NP resists sunlight up to 2 years.
- D. Flashing: Polyguard® Airlok® Sheet 200 BU / NP is a 28-mil, laminated, butyl compound, self-adhesive, non-permeable sheet 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. Use Airlok® Sheet 200 BU/NP for ambient and substrate surface temperatures 20° F (-6°C) and rising. Airlok® Sheet 200 BU/ NP resists sunlight up to 30 days.
- E. Flashing: Polyguard® Airlok® UV 200 BU / NP is a 28 mil, laminated, butyl compound, self-adhesive, non-permeable sheet membrane bonded to a cross-laminated polyethylene sheet and is used for wall flashing, joint flashing, and non-vapor permeable sheet air barrier. Use Airlok® Sheet UV 200 BU/NP for ambient and substrate surface temperatures 20° F (-6° C) and rising. Airlok® Sheet UV 200 BU/NP resists sunlight up to 1 year.
- F. 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.

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. Prepare all wall substrate surfaces and penetration substrates to be clean and dry: free of mortar smears and form release agents; and free of ice and frost.
- B. Once bleed water is absent from poured concrete walls, allow the concrete a minimum 3-day cure time before coating, giving longer cure time with lower ambient temperatures or heavy moisture saturation to reach a maximum 15% moisture content.

- C. Snap form ties flush to both sides of poured concrete walls; fill tie depressions and voids flush with the face of the wall using Detail Sealant PW™ or non-shrinking Portland cement grout installed per manufacturer's instructions. Allow fill material to dry before covering.
- D. Fill honeycombs with non-shrinking Portland cement grout, installed per manufacturer's instructions. Allow to thoroughly dry.
- E. Concrete masonry walls are to be unparged.
- F. Test for Polyguard® Airllok Flex® VP adhesion over concrete masonry walls containing integral moisture repellent. Mortar joints need to be struck full and flush to the face of the CMU.
- G. Allow concrete masonry wall assembly to cure for a minimum 3 days before coating, giving longer cure time with lower ambient temperatures or heavy moisture saturation to reach a maximum 15% moisture content. Core fills, bond beams, and/or rain add significant moisture to the assembly, thereby requiring longer dry time.
- H. Fill and smooth concrete masonry wall voids, surface defects, and surface protrusions greater than 1/2" deep and gaps between dissimilar materials with Detail Sealant PW™ or non-shrinking Portland cement grout installed per manufacturer's instructions. Allow sealant material a minimum 1 hour to skin over before covering, adding additional time for lower ambient and surface temperatures.
- I. Sheathing must be installed and fastened per manufacturer's instructions.
- J. Sheathed wall voids and surface defects voids are to be filled and made flush with substrate. Fill sheathing joints less than 1/4-inch wide with a bead of Detail Sealant PW™ tooled to 20 mils thick and onto a minimum of 1/2-inch beyond each side of the joint.
- K. Open joints are to be filled with foam, Polyguard® Detail Sealant PW™.
- L. For any detail work on transitions, joints, and rough openings:
 1. Method A - Field Application followed by Detailing for when ambient surface and air temperature is -20° F (-29° C) and rising:
 - a. Apply a field coating of Polyguard® Airllok Flex® VP with ambient and surface temperatures of -20° F (-29° C) and rising; allow 24 hours to dry.
 - b. Choose one of the following when ambient surface and air temperature is 25° F (-4° C) and rising:
 - i. Install fluid flashings; using Detail Sealant PW™ per Polyguard's details and specifications.
 - ii. Install sheet flashings; using Airllok 200 Series per Polyguard's details and specifications.
 - c. Note: Method A does not require primer with sheet flashings.
 2. Method B – Detailing followed by Field Application for when ambient surface and air temperature is falling down to 40° F (5° C) and rising:
 - a. Choose one of the following when ambient surface and air temperature is falling down to 40° F (5° C) and rising:
 - i. Install fluid flashings; using Detail Sealant PW™ per Polyguard's details and specifications.
 - ii. Install sheet flashings; using Airllok Sheet 200 Series or Airllok Sheet 400 Series per Polyguard's details and specifications.
 - b. Apply a field coating of Polyguard® Airllok Flex® VP with ambient surface and air temperatures down to 40° F (5° C) and rising.
 - c. Note: Method B requires primer with sheet flashings.

- M. Masonry Anchors: Install masonry tie fasteners through cured Airlok Flex® VP and into sheathing studs with Method A or B. If fasteners are set into studs and removed, vacant fastener holes will be filled with Detail Sealant PW™. For enhanced water resistance around fasteners, one of the following tie fastener placement methods:

Method A: For ambient surface and air temperature is 25° F (-4° C) and rising: Apply a 1/4-inch daub of Detail Sealant PW™ on the wall interfacing side of the fastener hole in the tie, and then fasten the tie to the structure and detail fastener head with a tooled bead of Detail Sealant, or;

Method B: For ambient surface and air temperature is 40° F (5° C) and rising: Install a minimum 2-inch wide strip of Airlok® Sheet 400 Series onto the face of dry Airlok Flex® VP. Position the flashing strip to be centerline penetrated by the fastener(s) and detail fastener head with a tooled bead of Detail Sealant.

3.03 APPLICATION OF AIR BARRIER SYSTEM

- A. Install all materials following manufacturer's guide specifications.
- B. No substrate priming is necessary.
- C. Apply Airlok Flex® VP air barrier membrane in ambient temperatures and on a surface temperature of 40° F (5° C) and rising, up to a maximum temperature of 120° F (49° C).
- D. Apply Airlok Flex® VP in one coat or more; by means of a sprayer, roller, or brush; to achieve a continuous film at the desired coverage rate of 50 square feet per gallon (32 mils wet / 16 mils dry). Coverage will be inversely related to texture and porosity of the substrate. Best spray results occur using a 0.027-inch reversible tip and having a minimum pressure of 2500 PSI.
- E. Apply extra material at anchor ties and penetrations.
- F. Allow Airlok Flex® VP air barrier field membrane application and the system accessories 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 of 24 hours to dry before continuing work on the surface. Coverage is considered complete when the dry field membrane has been inspected and found to be continuous.
- G. Water is used for clean-up of uncured Airlok Flex® VP air barrier membrane / material. Xylene is used for clean-up of cured Airlok Flex® VP air barrier membrane material.

3.04 MEMBRANE REPAIR

- A. Repair omissions, deficiencies, and damage by cleaning the subject area with either a clean rag and water or a 30% solution of isopropyl alcohol and water. Allow the cleaned surface to dry before applying additional material.

3.05 PROTECTION

- A. For 24 hours after installation, protect completed Airlok Flex® VP membrane system against water filling block cores. Protect finished air barrier system from adjacent work.
- B. The installed Airlok Flex® VP system will be adversely affected by prolonged or constant ultraviolet radiation (UV) exposure, and the maximum exposure term varies by product:
 - 1. For Airlok Flex® VP (UV) exposure greater than 1 year, cover the coating with an additional Airlok Flex® VP complete application prior to the end of the 1-year term; or remove the expired Airlok Flex® VP material after the end of the 1-year term and recoat the substrate surface with a new Airlok Flex® VP complete application.

END OF SECTION