

**MANUFACTURER’S GUIDE SPECIFICATION**

Section 07 27 13 – Self Adhered Sheet Membrane Air Barriers, Vapor Impermeable

**Polyglass VERTIWRAP NPS**

PART 1 – GENERAL

1. RELATED DOCUMENTS
   1. All Contract Documents, including General and Supplementary Conditions, and Division 1 General requirements, apply to this section.
2. SUMMARY
   1. Section includes complete air barrier system, preparation of substrate, to prevent air and the passage of liquid water into building structure. Including but not limited to the following materials:
      * 1. Fluid Applied Vapor Permeable Air Barrier
        2. Self- Adhered Flashings
        3. Liquid Flashing
        4. Primer
        5. Sealant
        6. Thru-Wall Flashing
3. RELATED SECTIONS
   1. DIVISION 03 – Concrete Section
   2. DIVISION 04 – Masonry Section 04 20 00 – Unit Masonry
   3. DIVISION 06 – Wood, Plastics, and Composites Section 06 16 00 Sheathing
   4. DIVISION 07 – Thermal and Moisture Protection Section 07 10 00 - Dampproofing and Waterproofing
   5. DIVISION 07 – Thermal and Moisture Protection Section 07 21 00 - Thermal Insulation
   6. DIVISION 07 – Thermal and Moisture Protection Section 07 26 00 - Vapor Retarders
   7. DIVISION 07 – Thermal and Moisture Protection Section 07 62 00 - Sheet Metal Flashing and Trim
   8. DIVISION 07 – Thermal and Moisture Protection 07 50 00 Membrane Roofing
   9. DIVISION 07 – Thermal and Moisture Protection Section 07 92 00 - Joint Sealants
   10. DIVISION 08 – Openings Section 08 40 00 - Entrances, Storefronts, and Curtain Walls
4. REFERENCES
   1. American Architectural Manufacturers Association (AAMA):
      1. AMMA 2400-02, Standard Practice for Installation of Windows with a Mounting Flange in Stud Frame Construction
   2. American Society for Testing and Materials (ASTM):
      1. ASTM D412, Standard Test Method for Vulcanized Rubber and Thermoplastic Elastomers - Tension
      2. ASTM D1970, Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
      3. ASTM D2243, Standard Test Method for Freeze-Thaw Resistance of Water-Borne Coatings
      4. ASTM D5590, Standard Test Method for Determining the Resistance of Paint Films and Related Coatings to Fungal Defacement by Accelerated Four-Week Agar Plate Assay
      5. ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials
      6. ASTM E96, Standard Test Methods for Water Vapor Transmission of Materials
      7. ASTM [E1677, Standard Specification for Air Barrier Material or System for Low-Rise Framed Building Walls](http://www.astm.org/cgi-bin/SoftCart.exe/DATABASE.CART/REDLINE_PAGES/E1677.htm?L+mystore+sxjz0304+1186523598)
      8. ASTM E2112, Standard Practice for Installation of Exterior Windows, Doors, and Skylights
      9. ASTM E2178, Standard Test Method for Air Permeance of Building Materials
      10. ASTM E2357, Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
      11. NFPA 285, Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components
5. ACTION SUBMITTALS
   1. Product Data: Manufacturer’s product data, installation instructions and details.
   2. Samples: Representative samples of the following:
      1. Free Film Membrane: 2" x 3" (5 x 7.5 cm)
      2. Self-adhered window and door flashing / transition membrane: 2” x 3" (5 x 7.5 cm)
      3. Self-adhered Through Wall Flashing: 2" x 3" (5 x 7.5 cm)
6. INFORMATION SUBMITTALS
   1. Product Data
      1. Air Barrier Manufacturer’s Sample Guide Specification
      2. Air Barrier Manufacturer’s Technical Data Sheet
      3. Air Barrier Manufacturer’s Detail Drawings
   2. Air Barrier Manufacturer’s Sample Warranty
   3. Sustainability Submittals:
      1. Provide VOC content of all components.
      2. LEED Submittal: Documentation of materials, recycled content, and location of manufacturer.
   4. Material Certificates: Certification that air barrier system and components comply with specified performance characteristics and physical requirements and are supplied by single-source manufacturer.
   5. Contractor Certificate: Approved Applicator status with air barrier material Manufacturer.
7. QUALITY ASSURANCE
   1. Installer Qualifications to:
8. Have minimum three (3) years of experience in type of work required by this section.
9. Comply with manufacturer's warranty requirements.
10. Be approved applicator as determined by air barrier system manufacturer.
11. Attend necessary job meetings. Provide competent and full-time supervision, experienced mechanics, all materials, tools, and equipment necessary to complete, in acceptable manner, the membrane installation.
    1. Manufacturer Qualifications:
       1. Capable to supply all components of complete air barrier system.
       2. Minimum of five (5) years of experience in manufacturing of air barrier systems.
       3. Capable of providing product and technical support representation during construction, approving an acceptable applicator, and suggesting appropriate installation methods.
       4. ISO 9001-2000 Certified Organization.
       5. ISO 14001-2004 Certified Environmental Management Organization.
    2. Pre-Installation Conference:
       1. Establish procedures to maintain required working conditions.
       2. Coordinate this work with related and adjacent work and trades.
       3. Review special project details.
       4. Verify with Architect and Contractor that air barrier details comply with air barrier manufacturer's current installation requirements and recommendations.
       5. Attendees should include representatives for Owner, Architect, Quality Assurance, General Contractor, Air Barrier Contractor, Air Barrier Manufacturer.
       6. Give minimum five (5) days’ notice to Owner, General Contractor, and Manufacturer prior to commencing work. Immediately notify parties of changes in work schedule.
    3. Air Barrier Inspection Qualifications: A qualified independent technical inspector to monitor air barrier material installation. Inspection to include:
       1. Compliance with project contract documents.
       2. Compliance with manufacturer’s published literature and site-specific details.
       3. Produce reports and digital photographs documenting each inspection. Make reports available in timely manner to Contractor, Air Barrier Installer, Air Barrier Material Manufacturer and Architect.
       4. Substrate examination at beginning of air barrier installation, at periodic intervals during air barrier installation and at final inspection.
    4. Mock-up:
       1. Area designated by Architect will be considered Mock-up.
       2. Incorporate back-up wall, substrate preparations, air barrier system inclusive of self-adhered or liquid flashings at opening and or transitions, insulation, exterior cladding and pre and post applied penetrations and or fasteners.
       3. Include air barrier transitions to foundation waterproofing and roofing systems.
12. PRODUCT DELIVERY, STORAGE AND HANDLING
    1. Delivery: Deliver materials in factory-sealed and factory-labeled packaging. Sequence material deliveries to avoid work delays and minimize on-site storage. Follow manufacturer's instructions, recommendations and material safety data sheets for material handling and storage.
    2. Storage: Protect air barrier materials from moisture, excessive temperatures, and sources of ignition. Cover the stored material on the top and all sides while on-site, allowing for adequate ventilation. Protect material from construction operation, weather, excessive temperatures, and prolonged sunlight.
    3. Store and manage hazardous materials in accordance with Section 01 35 29.06 - Health and Safety Requirements and Section 01 35 43 - Environmental Procedures. Remove damaged material from site and dispose of it in accordance with applicable regulations.
13. PROJECT CONDITIONS
    1. Substrate Condition: Proceed with work only when substrate construction and preparation work are complete and are acceptable for the air barrier application. Substrate preparation should comply with waterproofing manufacturer’s guidelines.
    2. Submit written report to General Contractor of substrate surface defects and work prepared by other Trades that adversely affect quality or dimensions of air barrier work.
    3. Weather Conditions: Perform work only when existing and forecasted weather conditions are within Manufacturer’s guidelines. Those guidelines include but are not limited to:
       1. Apply air barrier within the range of ambient and substrate temperatures recommended by the air barrier manufacturer.
       2. Do not apply air barrier materials over wet substrates snow, ice, frost or during rain
    4. Schedule work so the membrane will not be exposed for longer than recommended by Manufacturer.
14. WARRANTY
    1. Air Barrier System Warranty: Air Barrier Manufacturer to provide sample of [five (5)], [ten (10)], year warranty that the air barrier and accessories are free of defects. Issuance of Manufacturer's Waterproofing Warranty requires the following:
       1. Air Barrier System and accessories products provided by single manufacturer.
       2. Installation of air barrier system and accessories are installed by a Manufacturer's Approved Applicator in full accordance with manufacturer’s recommendations, installation instructions, specifications, and details.

PART 2 – PRODUCTS

1. MANUFACTURER
   1. Materials: Obtain air barrier system including all components and accessories from single manufacturer to ensure material compatibility.
   2. Polyglass, 1111 West Newport Center Drive, Deerfield Beach, FL 33442, USA. Toll-Free (888) 410-1375; Website: www.polyglass.us.
2. SELF ADHERED SHEET MEMBRANE AIR BARRIER, VAPOR IMPERMEABLE
   1. SELF ADHERED AIR BARRIER MEMBRANE: VERTIWRAP NPS as manufactured by Polyglass, a self-adhered, vapor Impermeable, membrane that prevents the passage of air and water vapor, while providing a barrier to water ingress when applied to construction surfaces.
3. SELF ADHERED SHEET MEMBRANE AIR BARRIER, VAPOR IMPERMEABLE PERFORMANCE PROPERTIES
   1. Air Permeance (Membrane) - ASTM E2178, not to exceed 0.004 cfm/ft.2 under a pressure differential of 0.3 in. water (1.57 psf) (equal to 0.02 L/s- m2 @ 75 Pa)
   2. Assembly Air Permeance – ASTM E2357, provide a continuous air barrier assembly that has an air leakage not to exceed 0.04 cfm/ft. 2 of surface area under a pressure differential of 0.3 in. water (1.57 psf) (equal to 0.2 L/s-m2 of surface area at 75 Pa)
   3. Water resistance - ASTM E331 Pass. at 15 psf
   4. Water Vapor Permeance - ASTM E96, Method B: >0.1 perms
   5. Elongation – ASTM D412 >250%
   6. Tensile strength – ASTM D882 >40 lbf/in
   7. Peel Adhesion to DensGlass – ASTM D903 >4.5 lbf/in
   8. Nail Sealability – ASTM D1970 PASS
   9. Low Temperature Flexibility – AC 38, Section 3.4 PASS
   10. UV Exposure – AC 38, Section 4.1.2 PASS
   11. Flame Spread – ASTM E84 Class A
   12. Smoke Developed – ASTM E84 Class A
   13. Maximum In-Service Temperature 180°F (82°C)
   14. Color White with green print
   15. Fire Testing – NFPA 285 complaint in various wall assemblies
   16. AMMA-711 Complaint
4. AIR BARRIER ACCESSORIES:
   1. Self-Adhered Flashing and Transition Membrane:
5. VERTIWRAP NPS
   1. AMMA-711 Complaint
6. VERTIWRAP TWF
   1. Penetration, Terminations and Sheathing Joint Treatment Sealant
7. VERTISEAL 50, Moisture cured elastomeric sealant using a silane terminated polyether (STPE)
   1. Liquid Flashing
8. VERTISEAL 50, Moisture cured elastomeric liquid applied flashing using a silane terminated polyether (STPE)
   1. AMMA-714 Compliant

PART 3 – EXECUTION

* 1. It is the installing Subcontractor’s responsibility to verify the substrate is in accordance with Air Barrier Manufacturer requirements and as specified in this Section prior to installation of air barrier. Commencement of the Work or any parts thereof, indicates installer acceptance of the substrate.
  2. Notify contractor in writing of any conditions that are not acceptable.
  3. Do not apply air barrier assembly components until substrate and environmental conditions are in accordance with Air Barrier Manufacturer’s published literature.

3.1 PREPARATION

* 1. Acceptable substrates include exterior-grade gypsum sheathing, plywood, OSB, precast or cast-in-place concrete, CMU, primed steel, aluminum mill finish, anodized aluminum, and galvanized metal.
  2. Verify surfaces are sound, clean, and free of frost, oil, grease, dirt, excess mortar, or other contaminants.
  3. Sheathing panel joints should be securely fastened and all fasteners must be installed into solid backing and set flush with sheathing.
  4. Masonry joints must be struck flush. Allow fresh CMU mortar joints to cure for a minimum of 3-days.
  5. Tie holes/voids in poured concrete to be flush and smooth shall be filled. Allow new concrete to cure a minimum of 3-days after forms are removed.
  6. Top and backside of substrate walls must be protected against bulk water during and after application of air barrier.
  7. Curing compounds must be resin based without oil, wax, or pigments. Substrates must be free of form release agents.
  8. Remove contaminants such as dirt, debris, oil, grease, wax, cement laitance, or other foreign matter that will impair or negatively affect performance of air barrier system.
  9. Protect adjacent work areas and finish surfaces not receiving air barrier from damage or contamination from air barrier overspray during installation operations.

1. JOINT TREATMENT
   1. Concrete and Masonry: Prepare, treat, and fill joints and cracks in substrate according to ASTM C1193 and air barrier manufacturer's written instructions.
   2. Sheathing Panels: Fill all sheathing joints with VERTISEAL 50 only if they exceed 1/4 in. (6.35 mm) in width
2. GENERAL INSTALLATION GUIDELINES - AIR BARRIER MEMBRANE
   1. Apply air barrier membrane to achieve a continuous air barrier according to air barrier manufacturer's written installation instructions.
   2. Apply air barrier membrane within manufacturer's recommended application temperature ranges. Do not apply during rain or inclement weather or when air and substrate temperatures are below 25°F (-4°C)
   3. Apply primer to substrates as required by the manufacturer’s written installation instructions
   4. Refer to Air Barrier Manufacturer detail drawings for installation procedures including, but not limited to, the following:
      1. Sheathing Joints
      2. Control joints
      3. Expansion Joints
      4. Deflection Joints
      5. Inside corners
      6. Outside corners
      7. Penetrations
      8. Rough openings
   5. Contact the Air Barrier Manufacturer to coordinate transitions to adjacent work including, but not limited to, the following:
      1. Below Grade Waterproofing
      2. Above Grade Waterproofing
      3. Roofing
   6. Do not cover air barrier until it has been tested and or inspected by third-party testing agency.
   7. Correct deficiencies in the air barrier installation that do not comply with requirements; repair substrates and reapply air barrier components.
3. DETAILING/FLASHING
   1. All self-adhered, liquid and through-wall flashing shall be installed per manufacturer’s standard details.
4. FIELD QUALITY CONTROL
5. Owner may contract with a qualified testing agency to perform inspections and or testing tests on site.
6. Allow fluid-applied product to cure for 72-hours prior to performance testing.
7. Ensure maximum exposure time of materials has not been exceeded.
8. Mortar has been removed from pre-installed masonry anchors.
9. Surfaces have been primed, if applicable
10. All self-adhered membrane has been installed in shingle fashion and any non-water shedding laps are sealed with VERTISEAL 50.
11. All self-adhered flashing is installed with proper overlaps per manufacturer’s installation instructions and free of fish-mouths
12. Penetration have been sealed
13. TESTING
14. Water Leakage Testing: Air barrier assemblies tested by third-party to ASTM E1105 for evidence or water leakage.
15. Air Leakage Testing: Air barrier assemblies tested by third-party to ASTM E1186 for evidence or air leakage.
16. Adhesion Testing: Air-barrier assemblies will be tested for required adhesion to substrate in accordance with ASTM D4541 by third-party.
17. CLEANUP
    1. In areas where adjacent finished surfaces or work are contaminated by air barrier material, immediately notify General Contractor and trade responsible for area. Consult manufacturer of surfaces for cleaning advice and conform to their recommendations and instructions. Remove all tools, equipment, and remaining product on-site. Dispose of debris and damaged product in accordance with applicable regulations.
    2. Maintain work area in a neat and workmanlike condition. Remove empty cartons and rubbish from site daily.
    3. Repair or replace defaced or disfigured finishes caused by work of this section.

END OF SECTION 07 27 13