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3.01.1 General

- A. This section will outline the key aspects of IKO's breathable building envelope products.
- B. The use and installation information provided shall be considered in conjunction with the General Requirements in Part 2 of this manual. Suitability of product use and building envelope design is the responsibility of the architect, building designer, contractor and/or building owner.

3.02.1 IKO AquaBarrier VP — Product Description

- A. IKO AquaBarrier VP is a self-adhering, primerless vapour-permeable membrane, providing superior performance in wall assemblies where a vapour-permeable, weather-resistive air barrier is required.
- B. IKO AquaBarrier VP is a polypropylene non-woven composite (fiber) membrane with low water retention capacity and is therefore mold- and mildew-resistant.
- C. IKO AquaBarrier VP is sold in rolls one hundred feet (100') (30.5 m) long, by thirty-seven and one-half inches (37.5") (952 mm) wide, yielding a roll area of three hundred twelve square feet (312 ft²) (29 m²). Note that wall area covered will vary depending on wall and detail geometries, system specification requirements, etc. Narrower AquaBarrier VP products are available in four inches (4") (102 mm), six inches (6") (152 mm), nine inches (9") (229 mm), twelve inches (12") (305 mm), and eighteen inches (18") (457 mm) widths, designed more specifically for taping joints and detail areas/penetrations (see Part 6).
- D. The product has a nominal thickness of sixteen mils (16 mils) (0.4 mm).
- E. Lines are imprinted on the upper surface at three inches (3") (75 mm) to aid in product overlapping and alignment during installation. Note that these lines will be visible on both edges of the thirty-six inch (36") (914 mm) roll, but may only be present on one edge of other width rolls. On the narrower products (less than eighteen inches (18") (457 mm) the selvage lines may not be present at all, in which case installation will require chalk lines to ensure consistent overlap.

3.02.2 IKO AquaBarrier VP — Uses and Installation

- A.** Due to the good adhesive qualities of IKO Aquabarrier VP, it is readily compatible with, and may be applied to, most common substrates, such as new construction of gypsum, OSB, block, concrete, CMU and plywood walls. The membrane may also be used in conjunction with insulated concrete form (ICF) wall construction; however, since these forms typically incorporate expanded polystyrene insulation, water-based primers and adhesives must be used rather than solvent-based primers and adhesives. The product is designed for numerous applications, such as masonry cavity walls, metal cladding systems, siding applications, renovations, and retrofits, and parapets.
- B.** IKO AquaBarrier VP is typically installed in conjunction with a breathable insulation, such as IKO Ener-Air, such that the wall assembly can dry via the free movement of vapour to the exterior.
- C.** Priming is generally not required for IKO AquaBarrier VP.
- D.** Orientation of the membrane may depend on substrate type and ease of accessibility.
- E.** Cut the membrane into approximately twenty-inch (20") (510 mm) or twenty-six inch (26") (610 mm) widths, respectively, if masonry ties are in place at every two or three brick courses (or size appropriately according to masonry tie dimensions).
- F.** Install to the substrate in manageable lengths, approximately six and one-half feet (6 ½') (2.5 m). Allow the precut sections of membrane time to lay flat and relax prior to installation.
- G.** Remove a portion of the release liner, approximately eight inches (8") (200 mm) from the back of the membrane prior to installation. Position membrane for installation and begin installation at the base of the wall. Apply sufficient hand pressure or use a roller to ensure adhesion to the substrate.
- H.** Remove the release liner, pulling from behind and parallel to the membrane. Continue to apply sufficient pressure to ensure adequate adhesion to the substrate.
- I.** Install successive courses of membrane, ensuring that all end laps are a minimum of six inches (6") (150 mm), and all side laps are aligned at three inches (3") (75 mm).
- J.** Apply a trowel coat of modified bitumen mastic, such as IKO AquaBarrier Mastic, around all brick ties.

- K. Continue membrane installation onto the horizontal and vertical planes to tie into all door frames and window sills.
- L. Seal top edge of the membrane to the substrate with modified bitumen mastic at the end of each workday.
- M. Cover as soon as construction scheduling will allow but do not leave the membrane exposed to sunlight/UV for more than one hundred eighty (180) days.
- N. Prior to installation of the insulation, inspect the membrane for punctures or tears. Any areas of breached membrane integrity must be repaired. The repair patch must extend at least six inches (6") (150 mm) beyond the damaged area on all sides.
- O. There is no "wait time" before the building can be re-entered. Providing other occupancy requirements are met, the building can be occupied immediately after installation of the IKO AquaBarrier VP installation.

3.03.1 **IKO Ener-Air Polyisocyanurate Insulation — Product Description**

- A. IKO Ener-Air is a permeable, nonstructural rigid polyisocyanurate insulation sheathing board with high thermal-resistance properties. It is constructed from closed-cell polyisocyanurate foam core, which is bonded on each side to a coated glass fiber mat facer.
- B. IKO Ener-Air is available in four foot by eight foot (4' x 8') (1.2 m x 2.4 m) and four foot by nine foot (4' x 9') (1.2 m x 2.5 m) boards in thicknesses of half inch (1/2") (12 mm), five-eighths inch (5/8") (16 mm), three-quarters inch (3/4") (18 mm), one inch (1.0") (25 mm) one and one-half inch (1 1/2") (38 mm) and two inch (2.0") (50 mm). Other sizes may be available upon request as a special order.
- C. IKO Ener-Air yields a Flame Spread Index < 75 and a Smoke Density Index < 450 when tested according to ASTM E84.
- D. IKO Ener-Air yields a Flame Spread Index < 500 when tested according to CAN/ULC S102.
- E. The insulation is classified as per the following product and/or system standards:
 1. ASTM C1289 - Type 2, Class 1, Grade 1.
 2. CAN/ULC S704 - Type 1, Class 3.
 3. ASTM E2357 – Pass (Note: When joints and penetrations are detailed using AquaBarrier VP Tapes and according to IKO specifications).
 4. CAN/ULC S742/ASTM E2357 – Class A1.

3.03.2 **IKO Ener-Air Polyisocyanurate Insulation — Uses and Installation**

- A.** Consult local building codes for requirements pertaining to thermal barriers, air barriers, vapour retarders, joint treatment and strapping. Use and application of this product must be in accordance with all local, provincial and national building code requirements.
- B.** IKO Ener-Air should not be used on the exterior below grade where it is subject to water infiltration.
- C.** IKO Ener-Air must not be installed to be in direct contact with hot surfaces (chimneys, furnace and water heater flues, etc.). Sufficient space/gap shall be provided, as per building code requirements. In all other wall locations, all insulation panel edges shall be fully butted together — gaps greater than one-quarter inch (1/4") (6 mm) shall be filled with similar insulating materials.
- D.** In order to reduce exposure to the elements, it is important to apply the exterior veneer over IKO Ener-Air as soon as practical, following its installation. If it will be left exposed for more than 30 days, keep a protective covering over the sheathing to protect it from environmental damage.
- E.** IKO Ener-Air may be used with or without IKO AquaBarrier VP, as it will function on its own as a weather-resistive barrier + air barrier, providing the insulation panel joints are covered with IKO AquaBarrier VP Tapes.
- F.** IKO Ener-Air is suitable for use in new or retrofit construction.
- G.** In wood frame construction, corner bracing must be ensured — the framing must be reinforced with either cross bracing or structural sheathing.
- H.** Fasten the IKO Ener-Air to wood studs with washered nails, ensuring the fastener penetrates a minimum of one inch (1") (25 mm). Exterior cladding may be fastened directly over the IKO Ener-Air, or vertical strapping may be installed over the insulation panels, and the cladding attached to the strapping. Typically, a nominal one-inch (1") (25 mm) air space shall be left between the exterior face of the insulation layer and the interior face of the cladding.
- I.** Fasten IKO Ener-Air to steel studs using mechanical fasteners and washers.
- J.** Fasten each four-foot by eight-foot (4' x 8') (1200 mm x 2400 mm) insulation panel with a minimum of 12 fasteners, evenly spaced and securely fastened. Do not overdrive fasteners and do not puncture the insulation facer.
- K.** IKO Ener-Air should be attached to block wall substrates using mechanical fasteners directly into block.

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- L. Insulation panels shall be factory-sized or cut at the job site to friction-fit between masonry brick ties. (Contact the IKO Technical Services Department regarding possible use and benefits of IKO AccuCut service for special panel sizing.)
- M. There is no “wait time” before the building can be re-entered. Providing other occupancy requirements are met, the building can be occupied immediately after installation of the IKO Ener-Air insulation.

End of Section