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4.01.1 General

A. This section will outline the key aspects of IKO's non-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.

4.02.1 IKO AquaBarrier AVB — Product Description

A. IKO AquaBarrier AVB is a self-adhering, cold-applied SBS-modified composite sheet membrane designed to act as an air and vapour barrier in a variety of wall systems.

B. IKO AquaBarrier AVB is manufactured by integrally bonding SBS-modified asphalt to a high-density cross-laminated woven polyethylene film.

C. IKO AquaBarrier AVB is sold in rolls, seventy-five feet (75') (22.89 m) long, in a variety of widths. Standard roll widths are eighteen inches (18") (457 mm), twenty-four inches (24") (610 mm) and thirty-six inches (36") (914 mm). Note: Narrower widths of three inches (3") (75 mm), four inches (4") (100 mm), six inches (6") (150 mm), nine inches (9") (225 mm) and twelve inches (12") (300 mm) are also available, designed more specifically for taping joints and detail areas/penetrations (see Part 6).

D. The product has a nominal thickness of forty (40) mils (1.0 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 rolls with other widths. On the narrower products (less than 18 inches [457 millimetres]), the selvage lines may not be present at all, in which case, site application of chalk-line guidelines may be required to ensure consistent overlap.

F. Conforms to CAN/ULC S741 (material) and CAN/ULC S742 (wall assembly).
Note: CAN/ULC S742 generally references the methodology in ASTM E2357.

4.02.2 IKO AquaBarrier AVB — Uses and Installation

A. Due to the modified bitumen coating on the backside of IKO AquaBarrier AVB, it is readily compatible with, and may be applied to, most common substrates, such as new construction of gypsum, OSB, block, concrete 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 AVB is typically installed in conjunction with a non-breathable insulation, such as IKO Enerfoil, resulting in a wall assembly that provides vapour transmission resistance.

C. Substrates must be primed with either IKO S.A.M. or IKO S.A.M. LVC Adhesive, or IKO Water-Based Adhesive prior to application of the IKO AquaBarrier AVB membrane. Ensure that all primers are dry before proceeding with membrane installation.

D. Orientation of the membrane may depend on substrate type and ease of accessibility. On precast concrete, the membrane may be applied either vertically or horizontally, whereas concrete block with brick ties will denote application in the horizontal plane.

E. If masonry ties are in place at every two or three brick courses, the appropriate width of IKO AquaBarrier AVB may be used to minimize membrane cutting.

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 pressure via a hand 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 overlapped a minimum of six inches (6") (150 mm), and all side laps are overlapped three inches (3") (75 mm).

J. Apply a trowel coat of modified bitumen 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. The membrane should be covered, and the wall assembly completed, as soon as practical. However, if wall assembly must be delayed, the membrane can be left exposed for up to one hundred eighty (180) days without loss of membrane integrity.

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 AVB.

4.03.1 IKO AcrylicStick SA — Product Description

A. IKO AcrylicStick SA is a self-adhering, cold-applied acrylic composite sheet membrane designed to act as an air and vapour barrier in a variety of wall systems.

B. IKO AcrylicStick SA is manufactured by integrally bonding an acrylic adhesive compound to a high-density cross-laminated woven polyethylene film.

C. IKO AcrylicStick SA is sold in rolls, seventy-five feet (75’) (22.86 m) long, in a variety of widths. Standard roll width is thirty-six inches (36") (914 mm). Note: Narrower widths of four inches (4") (102 mm), six inches (6") (152 mm), nine inches (9") (229 mm), twelve inches (12") (300 mm) and eighteen inches (18") (457 mm) are also available, designed more specifically for taping joints and detail areas/penetrations(see Part 6).

D. The product has a nominal thickness of ten (10) mils (0.25 mm).

E. Lines are imprinted on the upper surface at two inches (2") (50 mm) to aid in product overlapping and alignment during installation. Note that these lines will be visible on both edges of the sixty inches (60") (1524 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 site application of chalk-line guidelines may be required to ensure consistent overlap.

F. Conforms to CAN/ULC S741 (material) and CAN/ULC S742 (wall assembly). Note: CAN/ULC S742 references the methodology in ASTM E2357.

4.03.2 IKO AcrylicStick SA — Uses and Installation

A. Due to the acrylic adhesive compound on the backside of IKO AcrylicStick SA, it is readily compatible with, and may be applied to, most common substrates, such as new construction of gypsum, OSB, block, concrete and plywood walls. The membrane may also be used in conjunction with insulated concrete form (ICF) wall construction. The product is designed for numerous applications, such as masonry cavity walls, metal cladding systems, siding applications, renovations and retrofits, and parapets.

B. IKO AcrylicStick SA is typically installed in conjunction with a non-breathable insulation, such as IKO Enerfoil, resulting in a wall assembly that provides vapour transmission resistance.

C. Orientation of the membrane may depend on substrate type and ease of accessibility. On precast concrete, the membrane may be applied either vertically or horizontally, whereas concrete block with brick ties will denote application in the horizontal plane.

D. If masonry ties are in place at every two or three brick courses, the appropriate width of IKO AcrylicStick SA may be used to minimize membrane cutting.

E. 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.

F. 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. Since the acrylic adhesive compound is pressure-activated, sufficient pressure must be applied via a hand roller to ensure adhesion to the substrate.

G. Remove the release liner, pulling from behind and parallel to the membrane. Continue to apply sufficient pressure to ensure adequate adhesion to the substrate.

H. Install successive courses of membrane, ensuring that all end laps are overlapped a minimum of six inches (6") (150 mm), and all side laps are overlapped two inches (2") (50 mm).

I. Apply a trowel coat of quaBarrier Mastic around all brick ties.

J. Continue membrane installation onto the horizontal and vertical planes to tie into all door and window frames.

K. Seal top edge of the membrane to the substrate with AquaBarrier Mastic at the end of each workday. .

L. The membrane should be covered, and the wall assembly completed, as soon as practical. However, if wall assembly must be delayed, the membrane can be left exposed for up to one hundred eighty (180) days without loss of membrane integrity.

M. 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.

N. 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 AcrylicStick SA.

4.04.1 IKO Enerfoil Polyisocyanurate Insulation — Product Description

A. IKO Enerfoil is a 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 aluminum foil facers, to provide a vapour-impermeable (nonbreathable) wall sheathing/insulation.

B. IKO Enerfoil is available in four foot by eight foot (4' x 8') (1.2 m x 2.4 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) two inch (2.0") (50 mm), two and a half inch (2.5") (64 mm), three inch (3.0") (75 mm), three and one-half inch (3 1/2“) (89 mm), and four inch (4") (100 mm), and four foot by nine foot (4' x 9') (1.2 m x 2.5 m) in three-quarters inch (3/4") (18 mm), one inch (1.0") (25 mm) and one and one-half inch (1 1/2") (38 mm) thicknesses. Other sizes may be available upon request as a special order provided through IKO’s AccuCut process.

C. IKO Enerfoil yields a Flame Spread Index < 75 and a Smoke Density Index < 450 when tested according to ASTM E84.

D. IKO Enerfoil 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 1.
3. CAN/ULC S742/ASTM E2357 – Class A1.
4. Listed under CCMC Evaluation Report #13188-L.

4.04.2 IKO Enerfoil Polyisocyanurate Insulation — Uses and Installation

A. Consult local building codes for requirements pertaining to 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 Enerfoil should not be used on the exterior below grade where it is subject to water infiltration.

C. IKO Enerfoil 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 Enerfoil 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 Enerfoil may be used with or without IKO AquaBarrier AVB or IKO AcrylicStick SA tapes, as it will function on its own as a weather-resistive barrier, providing the insulation panel joints are covered with the appropriate IKO AquaBarrier tapes (priming with IKO S.A.M. Adhesive, IKO S.A.M. LVC Adhesive or IKO Water-Based Adhesive is required if IKO AquaBarrier AVB Tapes are used). When installed with IKO AquaBarrier AVB or IKO AcrylicStick SA tapes, the IKO Enerfoil is approved as a 2-in-1 weather-resistive barrier system per CAN/ULC S742/ASTM E2357.

F. IKO Enerfoil 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 Enerfoil to wood studs with washered nails or screws and plates, ensuring the fastener penetrates the studs a minimum of three-quarters inch (3/4") (19 mm). Exterior cladding may be fastened directly over the IKO Enerfoil, 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 masonry cladding, or as low as nominal one quarter inch (1/4") (6 mm) air space for metal or wood cladding.

I. Fasten IKO Enerfoil 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 such that they puncture the insulation facer. If the IKO Enerfoil is designed to perform in a 2-in-1 capacity as insulation and air barrier, and if the insulation fastener heads puncture the insulation facer, such overdriven fastener heads must be sealed with IKO AquaBarrier Mastic.

K. IKO Enerfoil is attached to block wall construction using construction-grade adhesive compatible with the air/vapour barrier surface.

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 Enerfoil insulation.

End of Section