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IKO Spec Note: This master specification is written to include SPEC NOTES noted as “IKO Spec Note” in order to assist designers in their decision-making process. SPEC NOTES precede the text to which they apply. This section should serve as a guideline only and should be edited by a knowledgeable person to meet the requirements of each specific project.

This Specification is based on IKO BSW-H (blindsheet waterproofing horizontal), IKO BSW-V (blindsheet waterproofing vertical) and all accessories related to blindsheet/underslab sheet waterproofing

Text indicated in bold and by square brackets is optional. Make appropriate decisions and delete the optional text as well as the brackets in the final copy of the specification. Delete or hide the SPEC NOTES in the final version of the document.

This specification section is written to follow the recommendations of the Construction Specifications Institute/Construction Specifications Canada (CSI/CSC) such as MasterFormat™, SectionFormat™, and PageFormat™. It is also written with metric and imperial units of measurement.

IKO Industries manufactures and sells building envelope materials. IKO does not practice architecture or engineering. Therefore, the design responsibility remains with the architect, engineer, or consultant. We hope the information given here will be of some assistance. It is based upon data considered to be true and accurate and is offered solely for the user's consideration, investigation and verification. Nothing contained herein is representative of a warranty or guarantee for which IKO Industries can be held legally responsible. IKO does not assume any responsibility for any misinterpretation or assumptions the reader may formulate.

PART 1 - GENERAL

1.1 GENERAL INSTRUCTIONS

1. Read and conform to:
 1. The General Conditions of the Contract.
2. Comply with Division 1 requirements and documents referred to herein.

1.2 SUMMARY

1. Section Includes: Provide SBS modified bituminous blindside and under slab sheet membranes, including but not limited to following:
 1. Cleaning and preparation of substrate.
 2. Installation of Vertical Blindside Waterproofing
 3. Under slab Foundation Waterproofing.
2. Related Sections: Following description of work is included for reference only and not presumed complete:
 1. Cast-In-Place Concrete: Section 03 33 00
 2. Unit Masonry: Section 04 20 00
 3. Thermal Insulation: Section 07 21 00
 4. Joint Sealants: Section 07 92 00
 5. Sheet Metal Flashings and Trim: Section 07 62 00
 6. Excavation and Support and Protection: Section 31 50 00
 7. Sub-drainage: Section 33 46 00

1.3 REFERENCES

1. Abbreviations and Acronyms:
 1. MSDS: Material Safety Data Sheets.
 2. SBS: Styrene-Butadiene-Styrene.
 3. ULC: Underwriters Laboratories of Canada.
 4. EPD: Environmental Product Declaration
2. Reference Standards:
 1. American Association of Textile Chemists and Colorists (AATCC):
 1. AATCC 30-2017: Antifungal Activity, Assessment on Textile Materials: Mildew and Rot Resistance of Textile Materials
 2. American Society for Testing and Materials (ASTM):
 1. ASTM C1028-07E1: Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method (Withdrawn 2014 – No replacement)

ISSUED FOR: [DESCRIPTION]

2. ASTM D1434-23: Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting
 3. ASTM D1621-16: Standard Test Method for Compressive Properties of Rigid Cellular Plastics
 4. ASTM D1709-22: Standard Test Methods for Impact Resistance of Plastic Film by the Free-Falling Dart Method
 5. ASTM D3345-17: Standard Test Method for Laboratory Evaluation of Solid Wood for Resistance to Termites
 6. ASTM D4073/D4073M-06(2019)e1: Standard Test Method for Tensile-Tear Strength of Bituminous Roofing Membranes
 7. ASTM D5147/D5147M-18: Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material
 8. ASTM D5385/D5385M-20: Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes
 9. ASTM D570-22: Standard Test Method for Water Absorption of Plastics
 10. ASTM D882-18: Standard Test Method for Tensile Properties of Thin Plastic Sheeting
 11. ASTM D903-98(2017): Standard Test Method for Peel or Stripping Strength of Adhesive Bonds
 12. ASTM E154 / E154M-08a(2019): Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover
 13. ASTM E1993/E1993M-2020: Standard Specification for Bituminous Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs
 14. ASTM E96/E96M-22ae1: Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials
3. K124/02/95: Radon Gas Diffusion Test Method.

1.4 ADMINISTRATIVE REQUIREMENTS

1. Coordination:
 1. Prior to start-up and during work, review conditions of space below to ensure conflicts and/or altercations are kept to a minimum.
 2. Work deemed disruptive to the overall Project shall be cleared by Contractor and Owner in advance.
2. Pre-Installation Meeting
 1. Arrange pre-installation meeting 1 week prior to commencing work with parties associated with trade as designated in Contract Documents or as requested by Consultant. Presided over by Contractor, include Consultant who may attend, Subcontractor performing work of this trade, Owner's representative, manufacturer's representative, testing company's representative and consultants of applicable discipline. Contact Consultant and involved parties minimum 2 weeks prior to pre-installation meeting to confirm details of meeting.
 2. Record discussions of conference, decisions, agreements or conflicts reached and furnish a copy to involved parties. Review preparations and installation procedures and coordinate scheduling required for work of this Section.
 3. Review methods and procedures related to membrane installation including following:
 1. Tour, inspect and discuss conditions and coordination of substrate and other work performed by trades impacting this Section.

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2. Review required submittals.
 3. Review and finalize construction schedules related to work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
 4. Review required inspections, testing, certifying and material usage accounting procedures.
 5. Review weather and forecasted weather conditions, and procedures for coping with unfavorable conditions.
 6. Review flashing details and other conditions that will affect the system.
 7. Review membrane observation and repair procedures after installation.
3. Scheduling
1. Co-operate with adjoining subtrades and promptly proceed with work as soon as site conditions permit.
 2. Ensure items to be incorporated into work of this Section and items required for incorporation by other subtrades are supplied in a timely manner. Proceed with work of this Section after built-in items are installed and substrates are completed.

1.5 SUBMITTALS

1. Provide submittals in accordance with Section **[01 33 00 - Submittal Procedures]**.
2. Provide 2 copies of each submittal unless otherwise noted in Specifications.
3. Product Data: Submit Product data on components of membrane system including but not limited to:
 1. Each product to be used, composition of material, and method of installation.
 2. MSDS.
 3. Certification of compliance with applicable standards and authorities having jurisdiction.
 4. Warranty
4. Shop Drawings: Submit Shop Drawings as required.
5. Samples: Provide samples of manufacturer's foundation waterproofing membrane material prior to commencement of work in this Section:
6. Manufacturers' Instructions: Submit manufacturers' installation instructions prior to installation of system for use during installation.
7. Qualification Statements:
 1. Provide a certificate or letter of authorization issued by membrane system manufacturer stating Contractor is registered, approved, authorized or licensed by system manufacturer to apply their Products and furnish manufacturer's warranties if required.

1.6 CLOSEOUT SUBMITTALS

1. Operation and Maintenance Data: Supply necessary maintenance data and repair instructions for binding into maintenance manuals. Data includes: Project name, location, dated and executed copy of manufacturer's warranty, described herein and name address and phone number of nearest manufacturer's representative. Include recommendations for periodic

inspections, care and maintenance. Identify common causes of damage with instructions for temporary patching until permanent repair can be made.

1.7 QUALITY ASSURANCE

1. Qualifications:
 1. Contractor: Must be recognized by membrane manufacturer as being qualified to install their membrane systems.
 2. Installers:
 1. Provide work of this Section executed by competent installers with minimum 3 years' experience in application of Products, systems and assemblies specified and with approval and training of Product manufacturers.
 3. Project Foreman:
 1. Provide a competent project foreman with minimum 5 years' experience in supervision of Foundation Waterproofing system installation, knowledgeable in membrane type specified herein. Ensure foreman is present at job site during majority of work hours and is accessible to ensure good project coordination.
 2. Do not alter foreman or crew without prior approval of Consultant.
 3. Foreman to monitor weather conditions and take steps to ensure appropriate measures are implemented due to inclement conditions and to protect materials equipment and work to date.

1.8 DELIVERY, STORAGE AND HANDLING

1. Delivery and Acceptance Requirements:
 1. Deliver materials in manufacturer's original, unopened containers with manufacturer's labels intact and legible.
 2. Carefully unload in a manner to prevent damage.
2. Storage and Handling Requirements:
 1. Refer to Product MSDS for precautionary measures during storage and handling.
 2. Keep pail goods and membrane materials dry, stored in rolls standing on end, selvage edge up, elevated from contact with moisture, at temperatures not less than 4°C (40°F) or more than 49°C (120°F) and pre-conditioned before installation. Handle rolls with care to avoid crushing, puncturing or other damage. Ensure selvage edge is not damaged during handling and banding strips are removed before application of membrane. Do not use wet or damp membrane or flattened rolls.
 3. Protect materials from damage by elements, weather and other activities on raised platforms (minimum 2") and covered with breathable tarpaulins.
 4. Ensure pail-goods have tight fitting lids when not in use. Store on end in up-right position.
 5. Store adhesive, emulsion based waterproofing mastics, sealants and primers between 15°C and 26°C (59°F and 79°F), or restore to temperature ranges before use.
 6. Store all materials as per Manufacturers written instructions
 7. Store combustible materials away from heat and open flames. Protect and store materials in dry, ventilated area away from welding flame, spark and from elements or harmful substance.

1.9 SITE CONDITIONS

1. Ambient Conditions: Do not apply membrane system during inclement weather or when ambient temperatures are expected to be below 5°C (40°F). For temperatures below this practice cold weather application techniques as recommended by membrane manufacturer.

1.10 WARRANTY

1. IKO Limited Material Warranty:
 1. Warrant work of this Section for a period of 5 years against leaks as a result of material defects in accordance with General Conditions of the Contract. Promptly correct any defects or deficiencies which become apparent within warranty period, to satisfaction of Consultant and at no expense to Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

1. Manufacturer List: Products of following manufacturers are acceptable subject to conformance to requirements of Drawings, Schedules and Specifications:
 1. [IKO Industries Ltd.; www.iko.com/comm](http://www.iko.com/comm)
2. Substitution Limitations: No further substitutions will be permitted.

IKO Spec Note: Select system below based on Hydrostatic Pressure. In areas that are subject to high water table, hydrostatic conditions and/or other extenuating circumstances, based on the geotechnical report a 2 ply installation maybe required

2.2 SYSTEMS

1. Description:
 1. A single self-adhered modified bitumen membrane forming a continuous Waterproofing layer on the interior support retaining wall side of the building foundation site with accessory drainage board outboard of the membrane system for walls. **Aquabarrier BSW-V by IKO Industries.**
 2. A single layer of modified bitumen membrane loose-laid below the concrete floor slab and above the floor prepared substrate. **Aquabarrier BSW-H by IKO Industries.**
2. Description:
 1. A 2 ply installation of a self-adhered modified bitumen membrane forming a continuous Waterproofing layer on the interior support retaining wall side of the building foundation site with accessory drainage board outboard of the membrane system for walls. **Aquabarrier BSW-V by IKO Industries.**
 2. A 2 ply installation of modified bitumen membrane loose-laid below the concrete floor slab and above the floor prepared substrate. **Aquabarrier BSW-H by IKO Industries.**

2.3 MATERIALS

1. All components of waterproofing assembly shall be compatible and work in conjunction to form a continuous barrier of waterproofing between the substrate and the foundation below grade.
2. Horizontal Membrane: Polyester reinforced SBS modified sheet membrane providing primary waterproofing below grade. Top surface comprised of mineral aggregate with a micro perforated film underside.
 1. Physical and Performance Characteristics:
 1. Thickness: 3.5mm in accordance with ASTM D5147
 2. Load Strain: in accordance with ASTM D5147
 3. Lap Strength: Custom; in general accordance with ASTM D5147
 4. Tear Strength - in accordance with ASTM D5147, Section 8, referencing ASTM D4073:
 1. Machine Direction (MD): 442N
 2. Cross Direction (XD): 347N
 5. Low Temperature Flexibility (Un aged) - in accordance with ASTM D5147, Section 12:
 1. Machine Direction (MD): Pass; No failure 10/10 at -18 °C
 2. Cross Direction (XD): Pass; No failure 10/10 at -18 °C
 6. WVP (as received): 5.0 ng/Pa·m²·s in accordance with ASTM E1993; ASTM E154, Section 7, referencing ASTM E96
 7. WVP (conditioned): 4.6 ng/Pa·m²·s in accordance with ASTM E1993, ASTM E154, Section 7, referencing ASTM E96
 8. Tensile Strength: in accordance with ASTM E1993;
 1. Machine Direction (MD): 2926 kPa
 2. Cross Direction (XD): 3711 Kpa
 9. Elongation at break:
 1. Machine Direction (MD): 79kPa
 2. Cross Direction (XD): 69kPa
 10. Resistance to Puncture: 952 N in accordance with ASTM E1993; ASTM E154, Section 10
 11. Puncture Resistance: Pass; No failure at 1357g and 660 mm height in accordance with ASTM E1993; ASTM D1709 (modified)
 12. Water Absorption: 0.933% in accordance with ASTM D570
 13. Peel Strength - in accordance with ASTM D903:
 1. On concrete substrate: 0.68 N/25mm
 2. On plastics substrate: N/A
 14. Hydrostatic Resistance of waterproofing: membrane: Pass/ Sustained for 1 hour at 600kPa (100psi) in accordance with ASTM D5385-2014e1 (modified)
 15. Methane Gas Permeability: 5.60119E-06 cm³/(cm²·s) or 4.83943 L/(m²·24hr) in accordance with ASTM D1434
 16. Crack Bridging Ability: Pass at -26 deg C° temperature in accordance with ASTM C1305
 17. Static Coefficient of friction - in accordance with ASTM C1028:
 1. On sanded side – dry: 0.94N
 2. On sanded side – wet: 0.71N
 3. On concrete – dry: 1.01N

4. On concrete – wet: 0.81N
18. Antifungal activity - 16 weeks soil burial: in accordance with AATCC 30 and ASTM D882
 1. Tensile Strength:
 1. Machine Direction (MD): 13.2 N/mm
 2. Cross Direction (XD): 9.4 N/mm
 2. Elongation:
 1. Machine Direction (MD): 70%
 2. Cross Direction (XD): 75%
19. Radon Diffusion Coefficient: $2.8 \cdot 10^{-11} \text{m}^2/\text{s}$ in accordance with K124/02/95
20. Wood Resistance to Termite: Pass a maximum termite attack rating of 10 in a 0-10 scale in accordance with ASTM D3345-17
 1. Acceptable Products:
 1. "Aquabarrier BSW-H" by IKO Industries Ltd
3. Vertical Membrane: Self Adhered SBS Composite sheet membrane providing primary waterproofing below grade. Polyester/Glass fiber composite mat with SBS rubberized asphalt, top surface is a mineral aggregate with a silicone treated release film on the back.
 1. Physical and Performance Characteristics:
 1. Thickness: 3.0mm in accordance with ASTM D5147
 2. Load Strain: in accordance with ASTM D5147
 3. Lap Strength: Custom; in general accordance with ASTM D5147
 4. Tear Strength - in accordance with ASTM D5147, Section 8, referencing ASTM D4073:
 1. Machine Direction (MD): 452N
 2. Cross Direction (XD): 305N
 5. Low Temperature Flexibility (Un aged) - in accordance with ASTM D5147, Section 12:
 1. Machine Direction (MD): Pass; No failure 10/10 at -18 °C
 2. Cross Direction (XD): Pass; No failure 10/10 at -18 °C
 6. WVP (as received): 4.6 ng/Pa·m²·s in accordance with ASTM E1993; ASTM E154, Section 7, referencing ASTM E96
 7. WVP (conditioned): 4.2 ng/Pa·m²·s in accordance with ASTM E1993, ASTM E154, Section 7, referencing ASTM E96
 8. Tensile Strength: in accordance with ASTM E1993;
 1. Machine Direction (MD): 3633 kPa
 2. Cross Direction (XD): 3951 Kpa
 9. Elongation at break:
 1. Machine Direction (MD): 91kPa
 2. Cross Direction (XD): 55kPa
 10. Resistance to Puncture: 931 N in accordance with ASTM E1993; ASTM E154, Section 10
 11. Puncture Resistance: Pass; No failure at 1357g and 660 mm height in accordance with ASTM E1993; ASTM D1709 (modified)
 12. Water Absorption: 1.11% in accordance with ASTM D570
 13. Peel Strength - in accordance with ASTM D903:

1. On concrete substrate: 0.71 N/25mm
2. On plastics substrate: 1.10 N/25mm

14. Hydrostatic Resistance of waterproofing: membrane: Pass/ Sustained for 1 hour at 600kPa (100psi) in accordance with ASTM D5385-2014e1 (modified)
15. Methane Gas Permeability: 5.60119E-06 cm³/(cm²*s) or 4.83943 L/(m²*24hr) in accordance with ASTM D1434
16. Crack Bridging Ability: Pass at -26 deg C° temperature in accordance with ASTM C1305
17. Static Coefficient of friction - in accordance with ASTM C1028:
 1. On sanded side – dry: 0.94N
 2. On sanded side – wet: 0.71N
 3. On concrete – dry: 1.01N
 4. On concrete – wet: 0.81N

18. Antifungal activity - 16 weeks soil burial: in accordance with AATCC 30 and ASTM D882
 1. Tensile Strength:
 1. Machine Direction (MD):13.2 N/mm
 2. Cross Direction (XD): 9.4 N/mm
 2. Elongation:
 1. Machine Direction (MD): 70%
 2. Cross Direction (XD): 75%

19. Radon Diffusion Coefficient: 2,8.10⁻¹ m²/s in accordance with K124/02/95
20. Wood Resistance to Termite: Pass a maximum termite attack rating of 10 in a 0-10 scale in accordance with ASTM D3345-17
21. Acceptable Products:
 1. “Aquabarrier BSW_V” by IKO Industries Ltd

4. Waterproofing Accessories:

1. Provide manufacturer-recommended accessory materials to produce a complete waterproofing system and compatible with waterproofing membrane.

IKO Spec Note: The following product is a solvent-based primer recommended for use when substrate and ambient temperatures are between -10 deg C and 40 deg C (14 deg F and 104 deg F)

1. Solvent-Based Primer: solvent-based, surface conditioner for surface preparation of substrates including wood, glass mat/gypsum sheathing, masonry, concrete and metal.
 1. Acceptable Products:
 1. “S.A.M. Adhesive” as manufactured by IKO Industries Ltd.

IKO Spec Note: The following product is a Low-VOC, solvent-based primer recommended for use when substrate and ambient temperatures are between -12 deg C and 40 deg C (10 deg F and 104 deg F)

2. Low-VOC Solvent-Based Primer: Low-VOC, solvent-based, surface conditioner for surface preparation of substrates including wood, glass mat/gypsum sheathing, masonry, concrete and metal.
 1. Acceptable Products:
 1. “S.A.M. Adhesive LVC” as manufactured by IKO Industries Ltd.

IKO Spec Note: The following Drainage Board selections are some examples available in the market. IKO Industries allows for the use of Drainage Boards from numerous manufacturers to be determined by the designer.

5. Drainage Board: Composite subsurface drainage panel acceptable to waterproofing manufacturer and consisting of a heavy-duty, high performance, black, two layer composite drainage sheet with dimpled non-clogging polypropylene drainage core and high-strength polypropylene non-woven geotextile with following characteristics:
 1. Physical characteristics:
 1. Dimpled Thickness: 10 mm.
 2. Dimpled Sheet Compressive Strength: 830 kPA to ASTM D1621.
 3. Drainage Core: Polypropylene.
 4. Needle-punched Geotextile: Non-woven polypropylene.
 2. Acceptable Products: “
 1. DMX Drain 15X by DMX Membranes
 2. DELTA®-DRAIN 6000 HI-X” by Dörken Systems Inc.
 3. NuDrain WD-15 by Nilex
6. Membranes for walls and under slab shall have the properties indicated by the most current printed PDS bulletins issued by IKO Industries Ltd.

PART 3 - EXECUTION

3.1 EXAMINATION

1. Verification of Conditions:
 1. Verify actual site dimensions and location of adjacent materials prior to commencing work. Notify Consultant in writing of any conditions which would be detrimental to installation.
 2. Verify penetrations and drains are present in quantity required.
 3. Examine substrate for compliance of conditions that affect installation and performance of membrane system.
2. Evaluation and Assessment: Proceed with installation of system after unsatisfactory conditions have been corrected. Commencement of work implies acceptance of previously completed work.

3.2 PREPARATION

1. Inspect all surfaces to receive waterproofing and correct any deficiencies that will compromise the application and performance of the membrane.
2. Ensure all surfaces to be associated with the waterproofing application are structurally stable and of sound construction.
3. Remove any debris from the area where the waterproofing membrane will be applied.

3.3 APPLICATION

1. Safety Precautions: Refer to Product MSDS sheets for any safety requirements when applying components.

IKO Spec Note: Select installation methods based on single ply or 2 ply application

IKO Spec Note: Select Installation around penetrations/details as either MS Detail with Reinforcement or Aquabarrier Mastic

2. Single Ply Blindsided Installation:
 1. Attach drainage board layer to substrate in accordance with the manufacturer's printed instructions. Ensure all seams are taped and secure. The filter mat must be facing outwards and the female dimpled smooth surface facing inwards.
 2. Starting from the top of the wall, prime the surface of the drainage board and allow primer to flash off for 30 minutes.
 3. Install self-adhesive waterproofing membrane, **AquaBarrier BSW-V**, to substrate in manageable lengths that allow for ease of installation and minimized mid sheet joints. It is advisable to remove a small amount of release film across the top.
 4. Install successive vertical sheets by overlapping such that the exposed selva edges line up and remove the film off the mating laps only when positioned properly.
 5. IKO BSW-V must be mechanically secured at the top of the termination with 2.0" round plates and appropriate fasteners every 13.0" o.c with a minimum end lap of 6.0" to cover screws and plates.
 6. End Laps must be heat welded a minimum of 6.0"
 7. Corners are typically best done with narrower sheets slit from the full width meter wide sheets so as to reduce the severity of wrinkles associated with corners that are not perfectly aligned. Continue around a corner onto the next wall by following the instruction for the first sheet. Continue in this fashion until the entire foundation vertical wall is completely covered in a monolithic layer of membrane.
 8. Penetrations moving through the wall shall have a target patch of **AquaBarrier BSW-V** cut so that the patch exceeds the dimension of the penetration by at least 6" in all directions. Prime the sanded exposed surface and adhere the target patch.
 9. [Finish around the penetration with IKO MS Detail liquid membrane and approved polyester reinforcement a minimum of 6.0" to affect a proper seal].
 10. [Finish around the penetration with IKO AquaBarrier Mastic a minimum of 6.0" to affect a proper seal.]
3. 2 Ply Blindsided Installation:
 1. Attach drainage board layer to substrate in accordance with the manufacturer's printed instructions. Ensure all seams are taped and secure. The filter mat must be facing outwards and the female dimpled smooth surface facing inwards.
 2. Starting from the top of the wall, prime the surface of the drainage board and allow primer to flash off for a minimum 30 minutes.
 3. Install self-adhesive waterproofing membrane, **AquaBarrier BSW-V**, to substrate in manageable lengths that allow for ease of installation and minimized mid sheet joints. It is advisable to remove a small amount of release film across the top, fasten with screws or nails sufficient to support the weight and then work downwards removing the film and rolling the membrane into tight contact with the substrate.
 4. Install successive vertical sheets by overlapping such that the exposed selva edges line up and remove the film off the mating laps only when positioned properly.

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5. IKO BSW-V must be mechanically secured at the top of the termination with 2.0" round plates and appropriate fasteners every 13.0" o.c with a minimum end lap of 6.0" to cover screws and plates.
6. End Laps must be heat welded a minimum of 6.0"
7. Apply primer to sanded surface and allow to flash off for a minimum 30 min
8. Install self adhered membrane to primed surface with side laps offset 12.0" and end laps offset 24.0" from previous layer
9. Remove release film from the bottom of sheet adhering to primed layer below. Apply uniform pressure to surface using a roller.
10. Corners are typically best done with narrower sheets slit from the full width meter wide sheets so as to reduce the severity of wrinkles associated with corners that are not perfectly aligned. Continue around a corner onto the next wall by following the instruction for the first sheet. Continue in this fashion until the entire foundation vertical wall is completely covered in a monolithic layer of membrane.
11. Penetrations moving through the wall shall have a target patch of **AquaBarrier BSW-V** cut so that the patch exceeds the dimension of the penetration by at least 6" in all directions. Prime the sanded exposed surface and adhere the target patch.
12. [Finish around the penetration with IKO MS Detail liquid membrane a minimum of 6.0" to affect a proper seal.]
13. [Finish around the penetration with IKO AquaBarrier Mastic a minimum of 6.0" to affect a proper seal.]

IKO Spec Note: Select installation methods based on single ply or 2 ply application

4. Single Ply Under Slab Application

1. Ensure that all ballast and site preparation is complete and in accordance with these contract documents making reference to the relevant sections of this specification.
2. Place each sheet in parallel fashion into place as a dry fit then remove the release film from the mating selvage edges and press firmly with a roller to ensure a solid bond All side and end laps must be heat welded with all end laps staggered a minimum of 12.0".
3. At all angle changes a 13.0" membrane flashing must be heat welded to cover the seams of the 2 BSW membranes. Membrane flashing must extend a minimum of 6.0" on both the vertical and horizontal surface.
4. End laps are to be a minimum of 6" with the lower sheet's corners mitered at 45 degrees before joining with heat fusing.

5. 2 Ply Under Slab Application

1. Ensure that all ballast and site preparation is complete and in accordance with these contract documents making reference to the relevant sections of this specification.
2. Place each sheet in parallel fashion into place as a dry fit then remove the release film from the mating selvage edges and press firmly with a roller to ensure a solid bond All side and end laps must be heat welded with all end laps staggered a minimum of 12.0".
3. At all angle changes a 13.0" membrane flashing must be heat welded to cover the seams of the 2 BSW membranes. Membrane flashing must extend a minimum of 6.0" on both the vertical and horizontal surface.
4. End laps are to be a minimum of 6" with the lower sheet's corners mitered at 45 degrees before joining with heat fusing.
5. Torch apply second layer with end laps offset 24.0" and side laps offset 12.0" from the base layer

IKO Spec Note: For penetrations the use of just IKO MS Detail and reinforcement may be considered

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6. All penetrations must be reinforced with a piece of heat welded membrane extending a minimum of 6.0" beyond affected surface.
7. To complete waterproofing of penetrations MS Detail liquid membrane and polyester reinforcement fabric must be used with a minimum 6.0" overlap on all adjacent material.
8. IKO MS Detail liquid membrane can be used in a similar fashion to that used for the vertical applications in conjunction with a patch or as a stand-alone system pending the complexity of the penetrations.
9. Prior to the concrete pour a thorough inspection of any breaches shall be conducted and any deficiencies repaired immediately.
10. Vertical/horizontal joining of the membrane systems shall be in accordance with the detailed drawings supplied by the Consultant.

3.4 SITE QUALITY CONTROL

1. Site Tests and Inspections:
 1. Owner may engage independent inspection company to inspect work of this Section. Give minimum 2 weeks' notice of starting work and allow inspector free access.
2. Inspection:
 1. Before membrane application is commenced, inspect and check wall surfaces.
 2. Ensure wall has been inspected and approved by Consultant prior to start of membrane application work.
3. Non-Conforming Work: Replace damaged work which cannot be satisfactorily repaired, restored or cleaned, to satisfaction of Consultant at no cost to Owner.
4. Manufacturer Services: Arrange for membrane manufacturer representative to visit site on day installation is commenced and periodically thereafter, to ensure work is properly performed. Upon completion of work of this Section, ensure manufacturer's representative inspects membrane application and verifies quality of and issue manufacturer's warranty. Ensure manufacturer's representative informs Consultant, Contractor and Subcontractor executing work of this Section promptly in writing when inspection is complete and provide detailed report.

3.5 CLEANING

1. Waste Management: Discard and legally dispose components that cannot be applied within its stated shelf life to requirements of authorities having jurisdiction.
2. Daily as the work proceeds and on completion, remove all surplus materials and debris resulting from the foregoing work.
3. Remove all stains, asphalt, caulking or other adhesive from all affected surfaces.

3.6 PROTECTION

1. Protect finished Work in accordance with Section 01 61 00 - Common Product Requirements.
2. Do not permit adjacent work to damage work of this section.

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3. Protect finished wall surfaces against damage of any kind. Protect finished sheet metal work and membrane flashing against punctures and damage of any kind. Be responsible for damage sustained by work of this trade.
4. Ensure waterproofing membrane is protected from U.V. radiation (sunlight) exposure within a maximum of 30 days.

3.7 ATTACHMENTS

1. Details:
 1. Foundation Waterproofing Membrane Details:
 1. Foundation Wall: follow IKO detail FP-03.
 2. Control Joint: follow IKO detail FP-06.
 3. Deck to Wall: follow IKO detail FP-04.
 4. Foundation Footing: follow IKO detail FP-02.
 5. Concrete Footing: follow IKO detail FP-01.
 6. Concrete Slab Penetration: follow IKO detail FP-08.

END OF SECTION