

## 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 membrane air/vapour barrier sheet membranes, including but not limited to following:
  - .1 surface preparation including:
    - .1 Cleaning of substrate.
    - .2 Air/Vapour Barrier.
  - .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 Sheet Metal Flashings and Trim: Section 07 62 00

### 1.3 REFERENCES

- .1 Abbreviations and Acronyms:
  - .1 LTTR: Long Term Thermal Resistance.
  - .2 MSDS: Material Safety Data Sheets.
  - .3 SBS: Styrene-Butadiene-Styrene.
  - .4 ULC: Underwriters Laboratories of Canada.
- .2 Reference Standards:
  - .1 CAN/CGSB 37-GP-56M - 9th Draft, 1997 - Standard for Modified Bituminous Sheet Membranes.
  - .2 CAN/CGSB 37-GP-9Ma - Standard for Unfilled Asphalt Primer
  - .3 CAN/CGSB 37-GP-5M - Standard for Asphalt Plastic
  - .4 ASTM E96 - Test Method for Water Vapour Transmission

- .5 ASTM D1970 -Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials
- .6 ASTM D41 - Standard for unfilled Asphalt Primer

#### 1.4 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination:
  - .1 Prior to start-up and during work, review conditions of space below to ensure conflicts and/or alterations are kept to a minimum.
  - .2 Work deemed disruptive to overall Project shall be cleared by Contractor and Owner in advance.
- .2 Preinstallation Meetings:
  - .1 Arrange preinstallation 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 preinstallation 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.
    - .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 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 2 copies of each submittal unless otherwise noted in Specifications.
- .2 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.
- .3 Shop Drawings: Submit Shop Drawings as required.
- .4 Samples: Provide samples of manufacturer's Air/Vapour Barrier prior to commencement of work in this Section:.
- .5 Manufacturers' Instructions: Submit manufacturers' installation instructions prior to installation of system for use during installation.
- .6 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 Manufacturers: Company to 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.
    - .2 Project Foreman:
      - .1 Provide a competent project foreman with minimum 5 years' experience in supervision of Air/Vapour Barrier 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 Do not expose insulation and sheathing to wet weather. Store and handle insulation to prevent broken edges and corners, punctures, indentations or other damage. Remove damaged insulation from site.
- .6 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.
- .7 Store materials at site within temporary sheds or trailers; such facilities must be well sealed and kept at least 3°C (5°F) warmer than exterior ambient temperature to ensure materials remain dry. Do not use wet, damp, frozen or damaged materials. Stack rolls on end.
- .8 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.
- .9 Do not lift rigid insulation in slings which will damage edges. Remove damaged insulation and replace with new material at no cost to Owner.

## 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 Labour and Membrane Warranty:

- .1 Warrant work of this Section for a period of 5 years against roof leaks as a result of material defects in accordance with General Conditions of the Contract. Ensure air/vapour barrier membrane is protected from U.V. radiation (sunlight) exposure within a maximum of 30 days. Ensure air/vapour barrier membrane is protected from U.V. radiation (sunlight) exposure within a maximum of 30 days 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. Defects include but are not limited to; leaking, buckling, opening of seams, bond failure and extensive colour fading.

## 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](http://www.iko.com)

- .2 Substitution Limitations: No further substitutions will be permitted.

### 2.2 SYSTEMS:

- .1 Description:

- .1 A single self-adhered modified bitumen membrane forming a continuous air and vapour barrier on exterior side of the building envelope.

- .2 Materials:

- .1 All components of the air barrier system, including membrane, sealants, primers, mastics and adhesives shall be supplied by one manufacturer.

- .2 IKO Aquabarrier AVB or IKO Aquabarrier AVB LT: Self-adhesive modified bituminous membrane, 1 mm (40 mils) applied thickness, by IKO Industries Ltd., conforming to ASTM D1970. The top surface will be covered with a high density cross-laminated woven yellow polyethylene film with a release paper on the underside.

- .3 IKO Aquabarrier S.A.M. Adhesive, IKO S.A.M. Adhesive LVC.

- .4 Aquabarrier Mastic.

- .5 IKO MS Detail.

### 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.
    - .1 Concrete Blocks:
      - .1 Unevenness between blocks not to exceed 2.5 mm (100 mils).
      - .2 Excess mortar in joints to be removed.
      - .3 Holes and openings must be patched in concrete blocks or mortar joints.
    - .2 Cast-In-Place Concrete:
      - .1 Ridges at the frame work joints shall not exceed 5.0 mm (197 mils) in height.
      - .2 Surface to be flat, remove any lumps of concrete.
      - .3 All surfaces must be clean and dry, free from laitance, release form oils etc.
      - .4 Tie holes are to be filled with appropriate material.
      - .5 Ensure concrete is cured and dried for a minimum of 7 days in dry weather.
    - .3 Pre-fabricated Panels (Concrete, plywood, gypsum board, etc.):
      - .1 Panels accepted are those presently used for roof support decks.
      - .2 Unevenness at panel joints not to exceed 5.0 mm (197 mils).
      - .3 Joint openings greater than 20 mm (787 mils) must be filled with compatible mortars (concrete panels) or covered with metal (wood or gypsum panels).
  - .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 Substrate to conform to Canadian Standards and Guidelines listed in Article 1.5.
- .2 Ensure the integrity of the air/vapour barrier will not be hindered by deficiencies in the substrate including but not limited to sharp protrusions, voids, unevenness in joints, etc.
- .3 Install product under acceptable weather conditions.

#### 3.3 APPLICATION

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

.2 Priming:

- .1 Apply Aquabarrier S.A.M. Adhesive or IKO S.A.M. Adhesive LVC using a short nap roller or spray equipment on substrates and between membrane overlaps. Masks and safety glasses must be worn if spray methods are utilized on the project.
- .2 Apply Aquabarrier S.A.M Adhesive or IKO S.A.M. Adhesive LVC at the rate of 0.33 - 0.66 litres per square metre (122 - 245 square feet per gallon) depending on surface porosity
- .3 Allow Aquabarrier S.A.M. Adhesive or IKO S.A.M. Adhesive LVC to be dry for a minimum of 30 minutes depending on ambient environmental temperatures before commencing membrane application. Drying time will depend on ambient temperature.

.3 Installation:

- .1 Install air/vapour barrier to primed substrate at ambient temperatures above 14° F (-10° C). Membrane is to be installed at all locations as noted in the Contract Documents and/or Architectural Drawings.
- .2 Orientation of membrane may depend on substrate type and ease of accessibility. On precast concrete the membrane may be installed either vertically or horizontally, whereas concrete block with brick ties will denote application in the horizontal plane.
- .3 Install self-adhesive air/vapour barrier to substrate in manageable lengths, approximately 2.5 metres (6.5 feet).
- .4 Remove a portion of the release paper, approximately 200 mm (8 inches) from the back of 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 primed substrate.
- .5 Remove the release paper pulling from behind and parallel to the membrane. Continue to apply sufficient pressure to ensure adequate adhesion to the substrate during removal of the release paper. Complete adhesion evenly rolling all membrane surfaces.
- .6 Install successive courses of membrane ensuring that all end laps are 150 mm (6 inches), and all side laps are 76.2 mm (3 inches). All end and side laps to be sealed by applying hand pressure or using a roller.
- .7 Cut membrane at approximately 510 mm (20 inch) widths or 660 mm (26 inch) widths respectively if masonry ties are in place at every two or three brick courses, or size accordingly with masonry ties,
- .8 Apply a trowel coat of IKO Aquabarrier Mastic around all masonry ties or penetrations (IKO MS Detail if detail is left continuously exposed to UV light).
- .9 Continue membrane installation onto the horizontal and vertical planes to tie into all door frames and windows sills.
- .10 Seal top edge of the membrane to the substrate with modified mastic at the end of each workday.
- .11 Do not allow membrane to come in contact with coal tar products such as creosote, EPDM membrane or polysulphide based sealants.

- .12 Do not expose the membrane to U.V. radiation (sunlight) for more than 30 days.
- .13 Prior to installation of the insulation, inspect membrane for punctures or tears. Any location where the membrane's integrity has been breached, repairs are mandatory. The repair patch must extend at least 150 mm (6 inches) beyond the damaged area on all sides. Seal the perimeter edges of the repair patch with a bead of IKO Aquabarrier Mastic.
- .4 Special Techniques:
  - .1 Cold Weather Precautions:
    - .1 Follow cold weather application guidelines from manufacturer when temperatures are expected to be below 5°C (40°F). If such guidelines are unavailable or not known, contact membrane manufacturer for clarification.
    - .2 During cold weather store roll goods and pail goods in a heated environment and bring to work site just prior to use. Unroll and allow SBS rolls to relax fully prior to installation. Time may vary for this depending on sunlight and air temperature. If in doubt, call membrane manufacturer for instruction.

### 3.4 SITE QUALITY CONTROL

- .1 Site Tests and Inspections:
  - .1 If required by inspection company or by Consultant, make cut tests. Subcontractor to pay costs of tests and making good assembly after completion of test.
  - .2 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.
  - .3 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.
- .2 Non-Conforming Work: Replace damaged work which cannot be satisfactorily repaired, restored or cleaned, to satisfaction of Consultant at no cost to Owner.
- .3 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 work to yield weather tight wall system 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.
- .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 air/vapour barrier membrane is protected from U.V. radiation (sunlight) exposure within a maximum of 30 days.

### 3.7 ATTACHMENTS

- .1 Details:
  - .1 Wall Membrane Details:
    - .1 Base Wall: follow IKO detail AVB-03.
    - .2 Movement Joint: follow IKO detail AVB-12
    - .3 Parapet Tie-In: follow IKO detail AVB-07.
    - .4 Window or Door Opening: follow IKO detail AVB-10.
    - .5 Window Sill: follow IKO detail AVB-01.
    - .6 Shelf Angle: follow IKO detail AVB-05.

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**END OF SECTION**