SECTION 07500
MEMBRANE ROOFING

PART 1 - GENERAL

1.1 SUMMARY

.1 Provide waterproofing system to roof composed of exposed two ply reinforced and SBS modified bitumen membranes, with a mechanically fastened base sheet and heat welded cap sheet.

.2 Provide concealed related flashings.

1.2 RELATED SECTIONS

.1 07620 Sheet Metal Flashing and Trim.

.2 Division 15 Mechanical.

1.3 REFERENCES

.1 ASTM A653/A653M-03, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2 Submit a report issued by a certified materials testing laboratory attesting that the roofing system offered was tested in accordance with CSA A 123.21-04, Standard Test Method for Dynamic Wind Uplift Resistance of Mechanically Attached Membrane Roofing Systems.

.3 Roofing and sheet metal work will be performed in conformance with the roofing manufacturer's written recommendations.

.4 CSA A123.4-04, Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems.

.5 CAN/ULC S107M.

.6 CAN/ULC-S702-97 Thermal Insulation, Mineral Fibre, Boards for Buildings.

.7 CAN/ULC-S704-01, Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Fixed.

.8 CAN/ULC-S 770-00, Determination of Long-Term Thermal Resistance of Closed-Cell Thermal Insulating Foams.

.9 CGSB 37-GP-56M-1985 Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing.

.10 CSA B111-1974 Wire Nails, Spikes and Staples.

1.4 SUBMITTALS

.1 Submit in accordance with Division 1 Submittal Procedures.

.2 Samples: Provide samples of roofing membranes for review.

.3 Laboratory Testing:

.1 Upon request from the Owner, the elastomeric asphalt manufacturers shall supply, at their expense, the results of mechanical and chemical testing performed on the elastomeric asphalt materials supplied.

.2 The tests shall be performed to certify compliance with CGSB 37-GP-56M July 1980.

.4 Roofing System Record:

.1 Provide to the Owner, the RCABC Guarantee Corp Roofing System Record upon completion of the work. Record to include guarantee, copies of inspection reports and roof maintenance guide.

1.5 QUALITY INSURANCE

.1 The membrane manufacturer's representative shall review the details with the Consultant prior to the start of work.

.2 Materials and workmanship shall conform to the guarantee standards of the Roofing Contractors Association of BC Guarantee Corp (RGC) as published in the RCABC Guarantee Corp Roofing Practices Manual, latest published edition and updates, for qualification for a five (5) year Guarantee Certificate.

.3 The roofing installation shall be inspected by an independent roofing inspection agency paid for by the Contractor in accordance with the RCABC Guarantee Corp guarantee program. The Owner will select the inspection agency from RGC list of approved agencies.

.4 The roofing inspector shall submit written reports to the Consultant within 24 hours after each inspection has been conducted.

.5 Contractor Qualifications:

.1 The roofing contractor shall be, during the bidding period as well as during installation, officially recognized as an approved contractor by the roofing materials manufacturer and a member in good standing of the Roofing Contractors Association of B.C.

.2 Roofing work shall be performed only by skilled applicators.

.6 Regulatory Requirements:

.1 Roof Covering Materials; Tested in accordance with CAN/ULC S107M to achieve a Class A, B, or C rating as required by local authorities having jurisdiction.

1.6 WARRANTY

.1 The product manufacturer shall supply a written and signed document issued in the name of the Owner. The warranty will cover removal and replacement of a defective membrane including labour, for a non pro-rated ten year period starting from the date of substantial performance. The membrane warranty cannot be limited by other system components that are only available or manufactured by the membrane manufacturer. Letters modifying the manufacturer's standard warranty will not be accepted.

.2 Provide standard RGC five (5) year guarantee upon completion of the Work.

1.7 DELIVERY STORAGE AND HANDLING

.1 Comply with or exceed RGC Safety Precautions - Torching for Modified Bituminous Systems as described in the RGC Roofing Practices Manual (Tab 5.0.1). Failure to do so may result in the work being suspended by the Consultant for non compliance with this requirement.

.2 Deliver and store materials in their original packaging bearing the manufacturer's name, related standards and any other specification or reference accepted as standard.

.3 Adequately protect and permanently store materials in a dry, well ventilated and weatherproof location. Only materials to be used the same day shall be removed from this location. During winter, materials shall be stored in a heated location with a 10degreeC minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.

.4 Carefully store materials delivered in rolls on end, with selvage edges up. Store metal flashings and counterflashings in such a way as to prevent wrinkling, twisting, scratches and other damage.

.5 Avoid stockpiling of materials on roofs, which could affect the loading of such roofs.

1.8 PROJECT CONDITIONS

.1 Manufacturer's Representative:

.1 The roofing materials manufacturer shall delegate a representative to visit the work site at commencement of work.

.2 Permit and facilitate access to roofs to manufacturer's representative.

.2 During roofing work, protect exposed surfaces of finished adjacent surfaces with tarps to prevent damage. Repair damage to adjacent surfaces

PART 2 - PRODUCTS

2.1 MANUFACTURERS

.1 Soprema Roofing Membrane system has been selected as a design standard for the project and the specification has been based on these products.

.2 Other manufacturers of similar products are invited to submit requests to be considered as equal or alternative to the product specified. Manufacturers requesting approval as equivalent products must offer

product warranties equal to that of Soprema.

.3 All waterproofing materials will be provided by the same manufacturer.

2.2 MEMBRANE MATERIALS

.1 Membranes: Conforming to CGSB 37-GP-56M-1985, must each have a minimum of 180 g/m2 of non woven polyester reinforcement. Base sheets must have a minimum thickness of 2.2 mm (3/32") for mop applications and a minimum thickness of 3 mm (1/8") for torch applications. Acceptable manufacturers include Soprema Inc., Monsey Baker, IKO and Siplast Canada. Cap sheets must have a minimum thickness of 3.0 mm (1/8") exclusive of granules.

.2 Description: Waterproofing system composed of composite glass mat reinforced and SBS modified bitumen membranes with a mechanically fastened base sheet and a heat-welded SEBS bitumen-adhered cap sheet. The top surface of the base sheet is covered with a thermofusible plastic film sand and must have two distinctive lines to facilitate roll alignment and fastener positioning. The cap sheet underface is covered with a plastic thermofusible film with sand and the top face is protected by coloured granules white slate flecks. The underface of the cap sheet self-adhesive is covered by a removable protective film. The base sheet is made up of a duo selvedge (70% self-adhesive and 30% thermofusible). Its self-adhesive component protects combustible surfaces and its thermofusible component provides an efficient seal.

.3 Specified products:

.1 Base sheet membrane: SOPRAFIX BASE 630 from SOPREMA.

.2 Cap sheet: SOPRAFIX TRAFFIC CAP by SOPREMA.

2.3 VAPOUR BARRIER

.1 Self adhesive vapour barrier with non-slip surface, suitable for application to wood decks, as per manufacturer's recommendations.

2.4 INSULATION

.1 Rigid Insulation: Polyisocyanurate, density 32 kg/cm to CAN/CBSB 51.26 M86, 20 psi, Colgrip by Soprema. Thickness as indicated and as required to provide R value required by code and as indicated.

.2 Protection Board: As recommended by roofing membrane manufacturer.

2.5 ACCESSORIES

.1 Metal Flashing:

.1 Base and counter flashing metal to be sheet steel, minimum 26 gauge, galvanized to ASTM A653/A653M, ZF275 coating, prefinished with Stelcolour 8000 series paint finish.

.2 Use standing seams where practical and S-lock seams where standing seams are impractical.

.3 Hem exposed edges of flashings a minimum of 18 mm (3/4") for rigidity.

.2 Screws, Bolts, Nails and Flashings: Of metal compatible with adjacent surfaces, size to be such to suit applicable conditions complying with CSA B111 Standard table 12.

.3 Cleats: Same metal but heavier gauge as sheet being anchored, 51mm wide, punched for 2 anchors.

.4 Caulking Compound: UV resistant, one part urethane sealant compatible with roofing membrane, and as recommended by roof membrane manufacturer.

.5 Bedding Compound: SBS modified plastic cement.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

.1 Before commencing work, the Owner's representative, together with the roofing contractor shall inspect and approve the deck condition - slopes and nailing supports, if applicable - as well as parapet walls, roof drains, stack vents, vent outlets and others and building joints. Commencement of work shall imply acceptance of surfaces and conditions.

.2 Before commencing work, ensure surfaces are smooth, dry, clean and free of ice and debris. No salt or

calcium shall be used to remove ice or snow.

.3 Equipment Supports: Install in accordance with manufacturer's details and instructions. Coordinate with related Sections.

.4 Check if the work of other trades has been properly completed.

.5 Do not install materials in conditions of rain, snow or fog.

.6 Protect adjoining surfaces from damage that could result from roofing installation.

3.2 INSTALLATION

.1 Install roofing elements on clean and dry surfaces, in accordance with the manufacturer's written installation requirements and published details and reviewed shop drawings.

.2 Roof assembly consists of vapour barrier, rigid insulation, protection board, base sheet, base flashing at all intersections, granulated top sheet.

.3 Perform roofing work on a continuous basis as surface and weather conditions allow.

.4 At the conclusion of each day's work, seal exposed edges of the roof. Cut and remove the seal upon continuation of the work.

.5 At openings for mechanical equipment install membrane up outside face of Mason Isolator curb, over top of curb and inside face of curb.

3.3 EQUIPMENT

.1 Maintain equipment and tools in good working order.

.2 Use torch types recommended by the manufacturer of the elastomeric asphalt membranes.

3.4 INSTALLATION OF METAL FLASHINGS

.1 Fabricate and install concealed flashings as shown on drawings and in conformity with RGC. Joints lapped, locked, cleated and caulked. Back prime flashings prior to installation. Line joints up with architectural features where possible

.2 Apply two coats of bituminous paint on each contacting surface between dissimilar metals.

.1 Install metal flashings to RGC guarantee standards and standard RGC flashing details.

.3 Form flashings square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance. Ensure that wide girth flashings are adequately sloped to the inside of the roof area and do not pond water.

.4 Securely anchor metal flashings to continuous blocking or nailers using clips and fasteners suitable for the purpose. Anchoring shall meet or exceed RGC guarantee requirements.

.5 Use concealed fastening unless otherwise approved by the Consultant.

.6 Flash copings, roof edges, openings and all items projecting through roofing. Ensure that no flashings pond water and that all drain to the interior of the roof area.

3.5 PAINTING

.1 Back Painting: Apply 1 coat bituminous anti-corrosive paint on concealed metal flashing surfaces before installation.

.2 Insulated Painting: Apply 2 coats bituminous anti-corrosive paint on each contacting surface between dissimilar metals.

3.6 CAULKING

.1 Caulk roof side joints in metal flashings including joints in coping flashings as required to provide fully watertight installation. Do not apply sealant at exposed locations without first consulting with the Consultant.

.2 Where required behind caulking, provide non-staining type joint backing of expanded polyurethane cell foam, compressed to half its width in joint.

.3 Do not use caulking compounds as the primary water seal for roofing applications. Sealants UV resistant and exhibit good adhesion with low modulus. One part urethane sealants are often ideal for general roofing applications. Silicone sealants should not be used for general roofing applications.

3.7 CLEANING

.1 The work site must be routinely cleared of rubbish and other materials which may hinder roof installation, performance, or present a fire hazard.

.2 Upon completion of membrane roofing, leave work in perfect condition.

3.8 PROTECTION

.1 Protect adjacent surfaces and drains from damage or plugging caused by the work of this section.

.2 Protect finished roof from damage and ensure that only authorized traffic and persons can access the finished roof. Install protective walkways when service personnel must access the roof to service equipment.

.3 Comply with safe work practices as required by the RGC Guarantee program and insurance providers.

END OF SECTION