SECTION 07121
SELF-ADHERED WATERPROOFING MEMBRANE

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PART 1. GENERAL

1.1 SUMMARY

.1 Section Includes

.1 Labour, Products, equipment and services necessary to complete the Work of this section.

1.2 MEASUREMENT AND PAYMENT

.1 All costs associated with the work of this Section shall be included in the price for Provisional item No. P6 in the Form of Tender.

1.3 RELATED SECTIONS

.1 Cast-in-Place Concrete Section 03300

1.4 SUBMITTALS

.1 Prior to commencing the Work, submit copies of manufacturers current certification to ISO 9002. Membrane, primers, sealants, adhesives and associated auxiliary materials shall be included.

.2 Prior to commencing the Work, submit references clearly indicating that the materials proposed have been installed for not less than five years on projects of similar scope and nature.

.3 Prior to commencing the Work, submit manufacturers complete set of standard details for sheet waterproofing.

1.5 QUALITY ASSURANCE

.1 Submit in writing, a document stating that the applicator of the sheet waterproofing membranes specified in this section is recognised by the manufacturer as suitable for the execution of the Work.

.2 Perform Work in accordance with the printed requirements of the membrane manufacturer and this specification.

.3 Maintain one copy of manufacturer instructions on site.

.4 At the beginning of the Work and at all times during the execution of the Work, allow access to Work site by the membrane manufacturers' representative.

.5 Components used in this section shall be sourced from one manufacturer, including sheet membrane, air/vapour barrier sealants, primers, mastics, and adhesives.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver materials to the job site in undamaged and original packaging indicating the name of the manufacturer and product.

.2 Store role materials horizontally in original packaging.

.3 Store adhesives and primers at temperatures of 5^0 C and above to facilitate handling.

.4 Keep solvent away from open flame or excessive heat.

.5 Protect rolls from direct sunlight until ready for use.

1.7 CO-ORDINATION

.1 Ensure continuity of the waterproofing membrane throughout the scope of this section.

1.8 ALTERNATIVES

.1 Submit requests for alternatives to this specification a minimum of ten (10) working days prior to tender closing for evaluation.

.2 Acceptable alternatives will be confirmed by addendum. Substitute materials not approved in writing prior to tender closing shall not be permitted for use on this project.

1.9 WARRANTY

.1 Contractor hereby warrants that the waterproofing membrane will stay in place and remain leak proof, but for two years.

.2 Waterproofing membrane manufacturer hereby warrants that the waterproofing membrane will remain in a watertight condition and will not leak as a result of faulty materials for a period of five years. Scope of warranty shall include material required to return the membrane to a watertight condition.

1.10 MEMBRANES

.1 Waterproofing Membrane: SBS modified bitumen, self-adhering sheet membrane with a cross-laminated polyethylene film, and having the following physical properties:

.1 Thickness: 1.5mm (60 mils) min.

.2 Flexibility: Pass @ -40□C to ASTM D1970

.3 Vapour permeance: 2.8 ng/Pa.s.m² (0.05 perms) to ASTM E96;

.4 Tensile strength (membrane): 2.24 MPa to ASTM D412;

.5 Tensile strength (film): 34.5 MPa to ASTM D882;

.6 Elongation: 300% to ASTM D412;

.7 Puncture resistance: 222 N min. to ASTM E154;

.8 Acceptable material: Blueskin® WP 200 as manufactured by Bakor

PART 2. PRODUCTS

2.1 PRIMER

.1 Primer for self-adhering waterproofing membrane: Polymer emulsion based adhesive type, quick setting, having the following physical properties:

.1 Colour: Aqua;

.2 Weight: 1.0 kg/l;

.3 Solids by weight: 53%;

.4 Water based, no solvent odours

.5 Drying time (initial set): 30 minutes;

.2 Acceptable material: Aquatac™ Primer as manufactured by Bakor.

2.2 LIQUID MEMBRANE

.1 Cold applied one component elastomeric waterproofing compound and sealant designed to be used in conjunction with sheet membrane having the following characteristics:

.1 Compatible with sheet waterproofing membrane, substrate and insulation materials,

.2 Solids by volume: 60%

.3 Vapour permeance: 2.9 ng/Pa.m².s, ASTM E96,

.4 Remains flexible with ageing,

.5 Chemical resistance: Alkalis, calcium chloride, mild acid and salt solutions.

.6 Acceptable material: ELASTO-SEAL™ LM as manufactured by Bakor

2.3 TERMINATION SEALANT

.1 Polymer modified sealing compound having the following characteristics:

.1 Compatible with sheet waterproofing membrane, substrate and insulation materials,

.2 Solids by volume: 70%

.3 Vapour permeance: 2.9 ng/Pa.m².s, ASTM E96,

.4 Complies with CGSB 37.29,

.5 Remains flexible with ageing,

.6 Ahears to wet surfaces,

.7 Chemical resistance: Alkalis, calcium chloride, mild acid and salt solutions.

.8 Acceptable material: Polybitume® 570-05 Polymer Modified Sealing Compound as manufactured by Bakor.

2.4 PROTECTION BOARD

.1 Protection Board: Asphalt core protection board having the following physical properties:

.1 Core: Mineral filled high melt point asphalt;

.2 Top surface: Inert non-woven glass reinforcing mat with polyethylene film cover;

.3 Bottom surface: Inert non-woven glass reinforcing mat;

.4 Acceptable material: Bakor Protection Board as manufactured by Bakor.

.2 Protection Board: Polypropylene extruded flexible twin-wall protection board with the following properties:

.1 Thickness: 2mm

.2 Weight: 0.45 kg/m2

.3 Compressive Strength: 0.45 kg/cm2

.4 Acceptable material: 990-31 Polypropylene Protection Board as manufactured by Bakor

.3 Extruded Polystyrene Insulation: To ASTM C578-85, with a minimum thickness of 50 mm or as per specified in drawings and in Section 07210.

PART 3. EXECUTION

3.1 EXAMINATION

.1 Verify that surfaces and conditions are ready to accept the Work of this section. Commencement of the work or any parts thereof shall mean acceptance of the prepared substrate.

3.2 PREPARATION

.1 All surfaces must be sound, dry, clean and free of oil, grease, dirt, excess mortar, frost or other contaminants. Fill spalled areas in substrate to provide an even plane.

.2 New concrete should be cured for a minimum of 7 days and must be dry before waterproofing membranes are applied. Lightweight structural concrete must be cured a minimum of 14 days.

.3 Use appropriate waterproofing membrane as recommended by manufacturer based on air and surface temperature at time of application.

3.3 PRIMER

.1 Apply primer for self-adhered membrane by roller or spray at rate recommended by manufacturer.

.2 Allow minimum 30 minute open time. Primed surfaces not covered by waterproofing membrane during the same working day must be re-primed.

3.4 JOINT AND CRACK TREATMENT

.1 All cracks in concrete 1.5mm to 3mm wide are to be pre-treated with a 1.5 mm (60 mil) coating of ELASTO-SEAL™ LM liquid membrane 50 mm wide centred on the crack. Alternately, apply a 150-mm wide strip of Blueskin® WP 200 centred over crack. Provide 75 mm end laps.

.2 Horizontal to vertical inside corner transition areas are to be pre-treated with an ELASTO-SEAL™ LM fillet extending 19 mm vertically and horizontally from the

corner. Apply a minimum 225 mm strip of Blueskin® WP 200 membrane centred at the joint.

.3 All outside corners are to be pre-treated with a minimum 225 mm strip of Blueskin® WP 200 membrane centred at the joint.

.4 Where three or more planes come into contact reinforce with cut sections of Blueskin® WP 200 reinforcing sheet as per manufacturers instructions.

3.5 EXPANSION JOINTS

.1 Install pre-moulded expansion joint in accordance with the manufacturer's most recent printed instructions.

3.6 DRAINS

.1 At drain, apply waterproofing membrane collar centred on drain and extend 150 mm onto deck.

.2 Apply field membrane in full width centred over drain.

.3 Apply clamping ring in a cured 1.5 mm (60 mil) bed of ELASTO-SEAL™ LM liquid membrane or Polybitume® 570-05 mastic.

3.7 PROJECTIONS

.1 Extend Blueskin® WP 200 membrane tight to projection and seal with ELASTO-SEAL™ LM liquid membrane extending 65 mm along projection and 65 mm onto Blueskin® WP 200 membrane.

3.8 WATERPROOFING MEMBRANE – VERTICAL APPLICATIONS

.1 Apply Blueskin® WP 200 waterproofing membrane to prepared substrate in lengths of 2400 mm or less. Provide 65 mm laps at both sides and ends. Position for alignment and remove protective film. Press firmly into place. Promptly roll all laps with a counter top roller to effect seal. If more than one length is required on a vertical surface, apply in a shingle fashion.

.2 Terminate membrane using Polybitume® 570-05 mastic or termination bar, reglet or counter flashing as indicated. Refer to manufacturer's standard details.

.3 All laps within 300 mm of a 90☐ change in plane are to be sealed with Polybitume® 570-05.

3.9 WATERPROFING MEMBRANE – HORIZONTAL APPLICATIONS

.1 Apply Blueskin® WP 200 waterproofing membrane to prepared substrate beginning at the low point of the surface and working to the high point in a shingle fashion. Provide 65mm side and end laps.

.2 Roll membrane immediately over entire surface to effect seal.

.3 At all terminations and T-joints, seal laps using ELASTO-SEAL™ LM or Polybitume® 570-05 mastic.

.4 All laps within 300 mm of a 90□ change in plane are to be sealed with Polybitume® 570-05.

3.10 PROTECTION OF FINISHED WORK

.1 Follow manufacturers recommendations for the application of protection boards or drainage panels.

.2 The waterproofing membrane is not designed for permanent exposure. Protect membrane from job site abuse as soon as possible following membrane application.

END OF SECTION