SECTION 07130

SHEET MEMBRANE WATERPROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Rubberized asphalt sheet membrane waterproofing.

B. Prefabricated drainage composite.

C. Protection board.

1.02 RELATED REQUIREMENTS

A. Section 02316 - Fill and Backfill.

B. Section 03300 - Cast-In-Place Concrete: Concrete substrate.

C. Section 04810 - Unit Masonry Assemblies: Masonry joints prepared to receive flashings.

D. Section 07900 - Joint Sealers: Sealant for joints in substrates.

1.03 REFERENCE STANDARDS

A. ASTM C 836 - Standard Specification for High Solids, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.

B. ASTM D 412 - Standard Test Method for Rubber Properties in Tension.

C. ASTM D 570 - Standard Test Method for Water Absorption of Plastics.

D. ASTM D 882 - Standard Test Methods for Tensile Properties of Thin Plastic Sheeting.

E. ASTM D 903 - Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.

F. ASTM D 1876 - Standard Test Method for Peel Release of Adhesives (T-Peel).

G. ASTM D 1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

H. ASTM D 3767 - Standard Practice for Rubber - Measurements of Dimensions.

I. ASTM D 5385 - Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes.

J. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.

K. ASTM E 154 - Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.

1.04 SUBMITTALS

A. See Section 01350 - Submittals, for submittal procedures.

B. Product Data: Submit manufacturer's product data, installation instructions, use limitations and recommendations. Include certification of data indicating VOC (Volatile Organic Compound) content of all components of waterproofing system.

C. Samples: Submit representative samples of the following for approval:
   1. Sheet membrane.
   2. Protection board.
   3. Prefabricated drainage composite.

D. Warranty: Submit manufacturer warranty and ensure forms have been completed in County of Orange/OC Public Works' name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer: Sheet membrane waterproofing shall be manufactured and marketed by a firm with a minimum of 20 years experience in the production and sales of self-adhesive sheet membrane waterproofing. Manufacturers proposed for use but not named in these specifications shall submit evidence of ability to meet all requirements specified, and include a list of project of similar design and complexity completed within the past 5 years.

B. Installer: A firm which as at least 3 years experience in work of the type required by this section.

C. Materials: For each type of material required for the work of this section, project primary materials which are the products of one manufacturer.

1.06 FIELD CONDITIONS

A. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application and until liquid or mastic accessories have cured.

1.07 WARRANTY

A. See Section 01700 - Contract Closeout, for additional warranty requirements.

B. Contractor shall correct defective Work within a five year period after Date of Substantial Completion; remove and replace materials concealing waterproofing at no extra cost to County of Orange/OC Public Works.

C. Provide five year manufacturer warranty for waterproofing failing to resist penetration of water, except where such failures are the result of structural failures of building. Hairline cracking of concrete due to temperature change or shrinkage is not considered a structural failure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Sheet Membrane Manufacturers:
   1. Grace Construction Products: www.na.graceconstruction.com.
   2. W.R. Meadows, Inc: www.wrmeadows.com.
   3. Substitutions: See Section 01640 - Substitutions and Product Options.

2.02 MEMBRANE MATERIALS

A. Sheet Membrane Waterproofing: Bituthene 3000/Low Temperature Membrane by Grace Construction Products; a self-adhesive, cold-applied composite sheet consisting of a thickness of 0.056-inch of rubberized asphalt and 0.004-inch of cross-laminated, high density polyethylene film. Provide rubberized asphalt membrane covered with a release sheet, which is removed during installation. No special adhesive or heat shall be required to form laps.

B. Sheet Membrane:
   1. Thickness: 0.060-inch nominal.
   2. Sheet Width: 36 inch minimum.
   3. Tensile Strength: 325 psi, measured in accordance with ASTM D 412.
   4. Ultimate Elongation: 300 percent, measured in accordance with ASTM D 412.
   5. Water Absorption: 0.1 percent increase in weight, maximum, measured in accordance with ASTM D 570, 24 hour immersion.
   6. Water Vapor Permeability: 0.05 perm inch, measured in accordance with ASTM E 96/E 96M.

C. Prefabricated Drainage Composite: Hydroduct 220 Drainage Composite by Grace Construction Products. Drainage Composite shall be designed to promote positive drainage while serving as a protection course.

PART 3 EXECUTION

3.01 EXAMINATION

A. The installer shall examine conditions of substrates and other conditions under which this work is to be performed and notify the Contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 PREPARATION OF SUBSTRATES

A. Refer to manufacturer's literature for requirements for preparation of substrates. Surfaces shall be structurally sound and free of voids, spalled areas, loose aggregate and sharp protrusions. Remove contaminants such as grease, oil and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Use repair materials and methods which are acceptable to manufacturer of sheet membrane waterproofing.

B. Cast-In-Place Concrete Substrates:
   1. Do not proceed with installation until concrete has properly cured and dried (minimum 7 days for normal structural concrete and minimum 14 days for lightweight structural concrete).
   2. Fill form tie rod holes with concrete and finish flush with surrounding surface.
   3. Repair bugholes over 13 mm (0.5 inch) in length and 6 mm (0.25 inch) deep and finish flush with surrounding surface.
   4. Remove scaling to sound, unaffected concrete and repair exposed area.
   5. Grind irregular construction joints to suitable flush surface.

C. Masonry Substrates: Apply waterproofing over concrete block and brick with smooth trowel-cut mortar joints or parge coat.

D. Related Materials: Treat joints and install flashing as recommended by waterproofing manufacturer.

3.03 INSTALLATION

A. Refer to manufacturer's literature for recommendations on installation, including but not limited to, the following:
   1. Apply primer at rate recommended by manufacturer. Re-coat areas not waterproofed if contaminated by dust. Mask and protect adjoining exposed finish surfaces to protect those surfaces from excessive application of primer.
   2. Delay application of membrane until primer is completely dry. Dry time will vary with weather conditions.
   3. Seal daily terminations with troweled bead of mastic.
   4. Apply protection board and related materials in accordance with manufacturer's recommendations.

3.04 CLEANING AND PROTECTION

A. Remove any masking materials after installation. Clean any stains on materials which would be exposed in the completed work.

B. Protect completed membrane waterproofing from subsequent construction activities as recommended by manufacturer.

END OF SECTION