

## SPECIFICATION

**SPEC NOTE:** This guide specification is basic and must be adapted to suit the requirements of individual projects. It is written in accordance with the Three-Part Section Format but may be rearranged to suit any format required. Square brackets [ ] indicate choice, alternatives, data required or need for the specifier to make a decision.

### 1 GENERAL

#### 1.1 SECTION INCLUDES

- .1 Below grade waterproofing and dampproofing.
- .2 Plaza deck and planter drainage sheets.

#### 1.2 RELATED SECTIONS

**SPEC NOTE:** *Re 1.2. Limit the following listings only to sections that have a DIRECT affect on this section.*

- .1 Section 07 11 13 - Bituminous Dampproofing.
- .2 Section 07 12 00 - Built-Up Bituminous Waterproofing.
- .3 Section 07 13 00 - Sheet Waterproofing.
- .4 Section 07 14 00 - Fluid-Applied Waterproofing.
- .5 Section 07 16 13 - Polymer Modified Cement Waterproofing.
- .6 Section 07 16 16 - Crystalline Waterproofing.
- .7 Section 07 16 19 - Metal Oxide Waterproofing.
- .8 Section 07 17 13 - Bentonite Panel Waterproofing.
- .9 Section 31 223 16 - Excavation.
- .10 Section 31 23 23 - Fill: Backfilling.
- .11 Section 33 46 00 – Sub drainage: Foundation perimeter drainage.

#### 1.3 SUBMITTALS

Product Data: Provide data on material characteristics, performance characteristics, limitations and independent test data

#### 1.4 QUALIFICATIONS

Applicator: Company specializing in performing work of this section approved by membrane material manufacturer.

#### 1.5 MOCK-UP

**SPEC NOTE:** *Use 1.5 when specifying full sized erected assemblies required for review of construction, coordination of work of several sections, site testing, education of specific trades involved, or observation of installation.*

- .1 Provide mock-up of materials under provisions of Section [01340].
- .2 Construct typical [exterior wall sample panel], [ ] m long by [ ] m wide, incorporating penetration seals [and junction with air barrier], illustrating materials interface and seals.
- .3 Locate [where directed].
- .4 Mock-up may [not] remain as part of the work.
- .5 Allow [24] h for inspection of mock-up by [Consultant] before proceeding with [waterproofing] work.

#### 1.6 PRE-INSTALLATION CONFERENCE

- .1 Convene [one week] prior to commencing work of this section, under provisions of Section [01040].
- .2 Ensure attendance of representatives from inspection company, manufacturer and applicator, and parties directly affecting the work of this section.
- .3 Review conditions of installation, installation procedures, and coordination with related work. Establish manufacturer's requirements for approval of substrate.

## 1.7 ENVIRONMENTAL REQUIREMENTS

- .1 Ensure application temperature and humidity recommended by material manufacturer is maintained before, during and after installation.
- .2 Do not expose materials vulnerable to water or sun damage in quantities greater than can be installed the same day.

## 1.8 SEQUENCE

- .1 Sequence work under the provisions of Section [ \_\_\_\_\_ ].
- .2 Sequence work to permit installation of materials in conjunction with related materials and seals.

## 1.9 CO-ORDINATION

- .1 Co-ordinate work of this section with all sections referencing this section.

## 2 PRODUCTS

### 2.1 MATERIAL

#### 2.1 MANUFACTURERS

1. All Products of This Section:
  - a. Advanced Coatings Inc.: (T) 800-787-8059 [www.advancedcoatings.on.ca](http://www.advancedcoatings.on.ca)
  - b. Substitutions: [[See Section 01600 - Product Requirements]][Not permitted]].

### 2.2 APPLICATIONS

- .1 Foundation Wall Drainage Sheet: Install drainage sheet over [[waterproofing] [dampproofing]], from bottom of wall to grade level, and in locations indicated on the drawings.
- .2 Basement Floor: Install horizontal application drainage sheet between mud slab, gravel substrate, or compacted soil and finish slab.
- .3 Planters: Install drainage sheet inside planters, over waterproofing.
- .4 Lagging Walls: Install drainage sheet on entire surface of walls prior to installation of rebar and pouring of foundation walls.
- .5 Tunnels and Similar Applications: Install drainage sheet over waterproofing membrane by others at top and sides. Pan Lining Applications: follow manufacturer's recommendations for anchoring.
- .6 Plaza Decks: Install horizontal application drainage sheet over waterproofing membrane.

### 2.3 MATERIALS

- .1 1. Drainage Sheet for Vertical and Horizontal application: High density polyethylene sheet, dimpled throughout field of sheet, with flat flange on manufactured edges; polypropylene filter fabric heat bonded to top of dimples.
  - a. Product: Advanced Coatings Inc. GEO-WRAP
  - b. Color: Black
  - c. Working Temperature Range: Minus 40 degrees C (minus 40 degrees F) to 80 degrees C (176 degrees F).
  - d. Dimple Height: 5mm
  - e. Compressive Strength: ASTM D 1621: Approximately 260 kN/sq m
  - f. Water Flow Rate Capacity: ASTM D 4716: 45 L/min/m
  - g. Water Vapour Permeance: ASTM E 96: 5 ng/P.s.m<sup>2</sup>
  - h. Weight: ASTM D638: 523 g/m<sup>2</sup>
  - i. Sustainable Design: Virgin co-extrusion process, utilizing virgin polyethylene on the outside layers and recycled HDPE in the middle to provide long-term in situ performance.

- .2 Accessories as recommended by product manufacturer's installation instructions.

### 3 EXECUTION

#### 3.1 EXAMINATION

1. Verify that substrates are sound enough to retain fasteners.
2. Verify that there are no active leaks within area to be covered.
3. Verify that perimeter foundation, or underslab drainage system has been properly installed.
4. Verify that finish grade elevations are clearly marked.
5. Do not begin installation until substrates have been properly prepared.
6. If substrate preparation is the responsibility of another trade, notify Architect of unsatisfactory preparation before proceeding.

#### 3.2 PREPARATION

1. Clean surfaces "broom clean" prior to installation.
2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
  - a. Remove projections larger than 6 mm (1/4"); remove sharp edges.
  - b. In concrete and masonry, patch cracks and holes so that they provide suitable substrate as recommended by membrane manufacturer.
3. Mark installation locations on walls prior to starting installation.

#### 3.3 INSTALLATION

1. Install in accordance with manufacturer's recommended procedure.
2. Do not install when:
  - a. Ambient temperature is below minus 30 degrees C.
  - b. Concrete has been cured for less than 1 day.
  - c. Standing water is present.
3. General Sheet Installation: Start at lowest point and work to top, running length of sheets horizontally and overlapping upper sheets in shingle fashion at least 6 inches (150 mm); lap vertical joints at least 6 inches (150 mm).
  - a. Install sheets without gaps, wrinkles, creases, or tears.
  - b. Align and interlock overlapping layers.
  - c. Secure to substrate at edges and in the field of the sheet using fasteners and methods recommended by sheet manufacturer; stagger fasteners in alternate rows.
  - d. Flash and seal top edges, around openings and penetrations, and other locations recommended by manufacturer, in manner recommended by manufacturer.
4. Drainage Sheets: In addition to general sheet installation specified above:
  - a. Install with cup side on side facing surface waterproofed.
  - b. Unless otherwise indicated, fasten dimpled sheets using specified fasteners with washers interlocked with sheet at not more than 12 inches (305 mm) on center.
  - c. At top, install with flat edge secured with GEO-WRAP MOLD STRIP. Fasten at not more than 8 inches (200 mm) on center.
  - d. At all joints, fasten through both layers with specified fasteners with washers.
  - e. At vertical joints, overlap sheets at least 6 inches (150 mm) and interlock dimples, making full contact
  - f. At horizontal joints overlap upper sheet over flat flange of lower sheet and fasten through both sheets at lower edge of upper sheet at 36 inches (910 mm) on center.
  - g. At inside and outside corners, install sheet as close to substrate as possible without breaking and fasten along both sides entire length of corner, not closer than 5 inches (125 mm) to corner.

5. Drainage Sheet: in addition to general sheet installation:
  - a. Install with protruding dimples and filter fabric on side facing away from the substrate, unless otherwise indicated.
  - b. On lagging, pile, or earth forms, and other "blind" wall construction, install drainage sheet with filter fabric in contact with form; seal joints in dimpled sheet continuously with tape; anchorage to forms may be by adhesive if necessary.
  - c. On low-slope split slab installations, install with filter fabric side up; seal dimpled sheets overlaps; anchor sheets sufficiently to prevent movement prior to and during installation of cover.
  - d. At plaza deck, pavers are not to be installed directly on the drainage sheet. A buffer layer between the drainage membrane and the pavers must be installed. Install with filter fabric side up with butt joints rather than overlap joints.
  - e. Use GEO-WRAP MOLD STRIP to enclose edges of drainage sheets; in fine silty clay soils, wrap exposed edges with filter fabric before installing GEO-WRAP MOLD STRIP.
  - f. Cover sheet laps with filter fabric and do not leave dimpled sheet exposed.
6. Repairs to Dimpled Sheet: Apply patch made of same material interlocked around tear or penetration.
7. Repairs to Filter Fabric: Tape matching material over damaged area.
8. In blindside application, after installation of reinforcing bars, inspect drainage sheet and repair damaged sheet and fabric.

#### 3.4 FIELD QUALITY CONTROL

- .1 An independent inspection and testing company appointed [and paid for by the owner] [under Cash Allowance specified in Section 01020] [will carry out inspection and testing in accordance with the General Conditions] [and Section \_\_\_\_].

#### 3.5 PROTECTION OF FINISHED WORK

- .1 Protect the finished work under provisions of Section [\_\_\_\_\_] – [\_\_\_\_\_].
- .2 Do not permit adjacent work to damage work of this section.