

**Part 1      General**

**1.1      SECTION INCLUDES**

- .1      Materials and installation of polymeric geotextiles used as part of the new marginal wharf construction, purpose of which is to:
  - .1      Separate and prevent mixing of backfill materials of different grading.
  - .2      Act as hydraulic filters permitting passage of water while retaining backfill in place and preventing erosion of backfill soils.

**1.2      RELATED SECTIONS**

- .1      Section 01 33 00 - Submittal Procedures.
- .2      Section 31 22 13 – Rough Grading

**1.3      MEASUREMENT FOR PAYMENT**

- .1      Measurement for supply and installation of geotextile will be made in square meters (m<sup>2</sup>) installed.

**1.4      REFERENCES**

- .1      American Society for Testing and Materials International, (ASTM), latest edition
  - .1      ASTM D4491, Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
  - .2      ASTM D4595, Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
  - .3      ASTM D4716, Standard Test Method for Determining the (In-Plane) Flow Rate Per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head.
  - .4      ASTM D4751, Standard Test Method for Determining Apparent Opening Size of a Geotextile.
- .2      Canadian General Standards Board (CGSB), latest edition
  - .1      CAN/CGSB-4.2 No. 11.2, Textile Test Methods - Bursting Strength - Ball Burst Test (Extension of September 1989).
  - .2      CAN/CGSB-148.1, Methods of Testing Geotextiles and Complete Geomembranes.
    - .1      No.2-M85, Methods of Testing Geosynthetics - Mass per Unit Area.
    - .2      No.3-M85, Methods of Testing Geosynthetics - Thickness of Geotextiles.
    - .3      No.6.1-93, Methods of Testing Geotextiles and Geomembranes - Bursting Strength of Geotextiles Under No Compressive Load.
    - .4      No.7.3-92, Methods of Testing Geotextiles and Geomembranes - Grab Tensile Test for Geotextiles.
    - .5      No. 10-94, Methods of Testing Geosynthetics - Geotextiles - Filtration Opening Size.

**1.5      SUBMITTALS**

- .1      Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

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**1.6 DELIVERY, STORAGE AND HANDLING**

- .1 During delivery and storage, protect geotextiles from direct sunlight, ultraviolet rays, excessive heat, mud, dirt, dust, debris and rodents.

**1.7 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal all packaging material.

**Part 2 Products**

**2.1 MATERIAL**

- .1 Geotextile: Armtec 250 or approved equal, non-woven synthetic fibre fabric, supplied in rolls.
  - .1 Width: 3.8 m minimum.
  - .2 Length: to suit intended purpose.
  - .3 Inhibitors added to base plastic to resist deterioration by ultra-violet and heat exposure.
- .2 Physical properties:
  - .1 Thickness: to CAN/CGSB-148.1, No.3.
  - .2 Mass per unit area: to CAN/CGSB-148.1, No.2, minimum 400 g/m<sup>2</sup>.
  - .3 Tensile strength and elongation (in any principal direction): to ASTM D4595.
    - .1 Grab Tensile strength: minimum 890 N.
    - .2 Grab Tensile Elongation at break: minimum 50%.
    - .3 Seam strength: equal to or greater than tensile strength of fabric.
  - .4 Grab tensile strength and elongation: to CAN/CGSB-148.1, No.7.3.
  - .5 Mullen burst strength: to CAN/CGSB-4.2, No.11.1, minimum 2756kPa.
- .3 Hydraulic properties:
  - .1 Apparent opening size (AOS): to ASTM D4751, 0.150 micrometres.
  - .2 Filtration opening size (FOS): to CAN/CGSB-148.1 No.10, 45-90 micrometres.
  - .3 Transmissivity: to ASTM D4716.
  - .4 Permittivity: to ASTM D4491, 1.4 sec<sup>-1</sup>.
- .4 Securing pins and washers: to CAN/CSA-G40.21 Grade 300W, hot-dipped galvanized with minimum zinc coating of 600 g/m<sup>2</sup> to ASTM-A125/A123M.

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**Part 3 Execution**

**3.1 INSTALLATION**

- .1 Place geotextile material by unrolling onto graded surface in orientation, manner and locations indicated.
- .2 Place geotextile material smooth and free of tension stress, folds, wrinkles and creases.
- .3 Place geotextile material on sloping surfaces in one continuous length from toe of slope to upper extent of geotextile.
- .4 Overlap each successive strip of geotextile 600 mm over previously laid strip.
- .5 Pin successive strips of geotextile with securing pins.
- .6 Protect installed geotextile material from displacement, damage or deterioration before, during and after placement of material layers.
- .7 Replace damaged or deteriorated geotextile to approval of Departmental Representative.
- .8 Place and compact soil layers in accordance with Section 31 22 13 – Rough Grading.

**3.2 CLEANING**

- .1 Remove construction debris from Project site and dispose of debris in an environmentally responsible and legal manner.

**3.3 PROTECTION**

- .1 Vehicular traffic not permitted directly on geotextile.

**END OF SECTION**