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**Part 1            General**

**1.1            RELATED REQUIREMENTS**

- .1        The list of work sections in this division is indicative and non-exhaustive. It does not exclude the works described in the other specification sections, shown in the drawings or necessary for the execution of the works in keeping with overall intent of the plans.
- .2        Section 01 33 00 - Submittal Procedures.
- .3        Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .4        Section 31 23 33.01 Excavating, Trenching and Backfilling.
- .5        Section 31 24 13 - Roadway Embankments.

**1.2            SECTION CONTENT**

- .1        Materials and installation of geotextiles used in revetments, filtration, drainage structures, retaining wall structures, and roadbeds, the purpose of which is to :
  - .1        Separate and prevent mixing of granular materials of different grading.
  - .2        Act as hydraulic filters permitting passage of water while retaining soil strength of granular structure.

**1.3            MEASUREMENT AND PAYMENT**

- .1        Geotextiles will not be measured for payment. They will be included in pricing for various articles.

**1.4            REFERENCES**

- .1        American Society for Testing and Materials International, (ASTM)
  - .1        ASTM D4491-99a, Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
  - .2        ASTM D4595-86(2001), Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
  - .3        ASTM D4716-01, Test Method for Determining the (In-Plane) Flow Rate Per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head.
  - .4        ASTM D4751-99a, Standard Test Method for Determining Apparent Opening Size of a Geotextile.
- .2        Canadian General Standards Board (CGSB)
  - .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 Geosynthetics - (Complete Set)
  - .1 No.2, Methods of Testing Geosynthetics - Mass per Unit Area.
  - .2 No.3, Methods of Testing Geosynthetics - Thickness of Geotextiles.
  - .3 No.6.1, Methods of Testing Geotextiles and Geomembranes – Bursting Strength of Geotextiles Under No Compressive Load.
  - .4 No.7.3-, Methods of Testing Geotextiles and Geomembranes – Grab Tensile Test for Geotextiles.
  - .5 No. 10, Methods of Testing Geosynthetics - Geotextiles – Filtration Opening Size.
- .3 Canadian Standards Association, (CSA International)
  - .1 CAN/CSA-G40.20/G40.21, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .2 CAN/CSA-G164, Hot Dip Galvanizing of Irregularly Shaped Articles.
- .4 Minister of Transport
  - .1 Tome VII Ouvrage d’art, Chapter 13, Geotextiles.

## **1.5 SUBMITTALS**

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative the following samples at least two weeks prior to beginning Work.
  - .1 Minimum length of 2 m of roll width of geotextile.

## **1.6 DELIVERY, STORAGE, AND HANDLING**

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

## **1.7 WASTE MANAGEMENT AND DISPOSAL**

- .1 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Needlepunched non-woven geotextile membrane with synthetic fibers, made with polyester or polypropylene. The membrane must be rot proof, resistant to mildew, to base and acids, as well as insect and micro-organisms proof (unalterable).
  - .1 The linear mass density of the polyester sewing thread is 250 Dtex.

- .2 Each rolls of geotextile membrane must be identified and contain informations about the manufacturer, the type of membrane, its dimensions, surface weight, and other mechanical properties.
- .3 Geotextile membrane accepted for wrapping clean crushed stone for bedding or drainage purposes :
  - .1 Texel 7609 from Solmax Texel.
  - .2 Materials or products alternative : approved in addendum as specified in the Instructions to bidders.
- .4 Geotextile membrane accepted for installation under riprap :
  - .1 Texel 918 from Solmax Texel.
  - .2 Materials or products alternative : approved in addendum as specified in the Instructions to bidders.

### **Part 3 Execution**

#### **3.1 PLACEMENT**

- .1 Place geotextile material by unrolling onto graded surface in orientation, manner and locations indicated, in appropriate manner.
- .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 Protect installed geotextile material from displacement, damage or deterioration before, during and after placement of material layers.
- .6 Replace damaged or deteriorated geotextile to approval of Departmental representative.
- .7 Do not backfill until Departmental Representative has approved of geotextile.
- .8 Place and compact soil layers in accordance with Section 31 24 13 – Roadway Embankments and Section 33 41 00 – Sewer pipe.

#### **3.2 CLEAN UP**

- .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**