

PART 1 - GENERAL

1.1 SECTION
INCLUDES

- .1 Materials and installation of polymeric geotextiles used in retaining wall structures, filtration, drainage structures and roadbeds, 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.

1.2 RELATED WORK

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .3 Section 31 22 13 - Rough Grading.
- .4 Section 31 23 33.01 - Excavating, Trenching and Backfilling.
- .5 Section 31 53 13 - Timber Cribwork.

1.3 REFERENCES

- .1 ASTM Society for Testing and Materials (ASTM)
 - .1 ASTM D4491-99a(2004)e1, Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
 - .2 ASTM D 4595-05, Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
 - .3 ASTM D 4716-04, 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 D 4751-04, Standard Test Method for Determining Apparent Opening Size of a Geotextile.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-4.2-M88, Textile Test Methods.
 - .2 CAN/CGSB-148.1, Methods of Testing Geotextiles and Geomembranes.
 - .1 No.2-M85, Mass per Unit Area.
 - .2 No.3-M85, Thickness of Geotextiles.

- 1.3 REFERENCES
(Cont'd)
- .2 (Cont'd)
- .2 (Cont'd)
- .3 No.7.3-92, Grab Tensile Test for Geotextiles.
- .4 No. 6.1-93, Bursting Strength of Geotextiles Under No Compressive Load.
- .3 Canadian Standards Association (CSA)
- .1 CAN/CSA-G40.20-04/G40.21-04, General Requirements for Rolled or Welded Structural Quality Steel.
- .2 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
- 1.4 SAMPLES
- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative the following samples at least 2 weeks prior to commencing work.
- .1 Minimum length of 1 m of roll width of geotextile.
- 1.5 MILL
CERTIFICATES
- .1 Submit to Departmental Representative a copy of mill test data and certificate at least 2 weeks prior to start of work.
- 1.6 DELIVERY AND
STORAGE
- .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 in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
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| <u>1.7 WASTE
MANAGEMENT AND
DISPOSAL
(Cont'd)</u> | .3 | Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, and packaging material, in appropriate on-site bins, for recycling in accordance with Waste Management Plan. |
| | .4 | Fold up metal banding, flatten and place in designated area for recycling. |
| <u>1.8 MEASUREMENT FOR
PAYMENT</u> | .1 | No measurement for payment to be made under this section. Include costs in items of work which geotextile is required. Section 31 53 13 - Timber Cribwork and Section 31 22 13 - Rough Grading. |

PART 2 - PRODUCTS

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| <u>2.1 MATERIAL</u> | .1 | Non-woven, mechanically bounded, needle punched polyester membrane, suitable for use in seawater environment, with the following material properties: <ul style="list-style-type: none">.1 4.7 mm thickness (CAN-148.1, No. 3).2 1180 N tensile strength (ASTM D4595).3 Elongation at break: 50 to 100 percent.4 Seam strength: equal to or greater than tensile strength of fabric.5 530 N Tear propogation (CAN-12.2).6 3850 Kpa Burst (Mullen) (CAN-4.2 method 11.1) |
| | .2 | Hydraulic properties: <ul style="list-style-type: none">.1 Apparent opening size (AOS): to ASTM D4751, 50 to 150 micrometres..2 Permittivity: to ASTM D4491, 0.25 cm per second. |
| | .3 | Securing pins and washers: to CAN/CSA-G40.21, Grade 300W, hot-dipped galvanized with minimum zinc coating of 600 g/m ² to CAN/CSA G164. |

PART 3 - EXECUTION

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| <u>3.1 INSTALLATION</u> | .1 | Place one (1) layer of geotextile material as indicated on drawings. |
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3.1 INSTALLATION
(Cont'd)

- .2 Place geotextile material by unrolling onto graded surface in orientation, manner and locations indicated and retain in position with securing pins and washers.
- .3 Place geotextile material on sloping surfaces in one continuous length from toe of slope to upper extent of geotextile.
- .4 Place geotextile material smooth and free of tension stress, folds, wrinkles and creases.
- .5 Overlap each successive strip of geotextile 600 mm over previously laid strip.
- .6 Join successive strips of geotextile by sewing.
- .7 Pin successive strips of geotextile with securing pins at 300 mm interval at mid point of lap as indicated.
- .8 Protect installed geotextile material from displacement, damage or deterioration before, during and after placement of material layers.
- .9 After installation, cover with overlying layer within 4 hours of placement.
- .10 Replace damaged or deteriorated geotextile to approval of Departmental Representative.
- .11 Place and compact soil layers in accordance with Section 31 23 33.01 - Excavating, Trenching and Backfilling.

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.