

PART 1 - GENERAL

- 1.1 SECTION INCLUDES
- .1 Materials and installation of polymeric geotextiles used in breakwaters, 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 35 31 34 - Rubble Mound Breakwater.
 - .3 Section 32 11 16 - Granular Sub-Base.
 - .4 Section 32 11 23 - Aggregate Base Courses.
- 1.3 REFERENCES
- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM D4491-99a(2004)e1, Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
 - .2 ASTM D4595-05, Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
 - .3 ASTM D4716-04, 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 D4751-04, 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.
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- 1.3 REFERENCES .2 (Cont'd)
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- .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.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard,
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- 1.7 WASTE .3 (Cont'd)
MANAGEMENT AND and packaging material, in appropriate on-site
DISPOSAL bins, for recycling in accordance with Waste
(Cont'd) Management Plan.
- .4 Fold up metal banding, flatten and place in
designated area for recycling.

PART 2 - PRODUCTS

- 2.1 MATERIAL .1 Geotextile: woven or non-woven synthetic
fibre fabric, supplied in rolls.
.1 Width: 3.5 m minimum.
.2 Length: 50 m minimum.
.3 Composed of: minimum 85% by mass of
polyester with 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,
minimum 2.5 mm.
.2 Mass per unit area: to CAN/CGSB-148.1,
No. 2, minimum 400 g/m².
.3 Tensile strength and elongation (in any
principal direction): to ASTM D4595.
.1 Tensile strength: minimum 1200 N,
wet condition.
.2 Elongation at break: 50 to 100
percent.
.3 Seam strength: equal to or greater
than tensile strength of fabric.
.4 Mullen burst strength: to CAN/CGSB-4.2,
method 11.1, minimum 3100 kPa.
- .3 Hydraulic properties:
.1 Apparent opening size (AOS): to ASTM
D4751, 50 to 150 micrometres.
.2 Permittivity: to ASTM D4491, 0.25 cm per
second.
- .4 Securing pins and washers: to CAN/CSA-G40.21,
Grade 300W, hot-dipped galvanized with minimum
zinc coating of 600 g/m² to CAN/CSA G164.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Place one (1) layer of geotextile material from L.N.T. on both sides of road to top of gravel fill and retain in position with securing pins and washers.
- .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 2000 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.

3.2 CLEANING

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

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3.3 PROTECTION .1 Vehicular traffic not permitted directly on
geotextile.

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