

Part 1 General

1.1 SECTION INCLUDES

- .1 Materials and installation of polymeric geotextiles used in revetments, breakwaters, retaining wall structures, filtration, drainage structures, roadbeds and railroad beds 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 SECTIONS

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 01 74 21 – Construction/Demolition Waste Management.

1.3 MEASUREMENT AND PAYMENT

- .1 Measure geotextiles in square metres of surface covered by material. No allowance will be made for seams and overlaps.

1.4 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM D4491-99a(2009)e1, Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
 - .2 ASTM D4595-09, Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
 - .3 ASTM D4716-08, 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.

1.5 SUBMITTALS

- .1 Submit product data sheets of proposed product in accordance with section 01 33 00 – Submittal Procedures.
- .2 Two weeks prior to beginning of Work, submit to the Departmental Representative the geotextile technical data specs.

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

- .1 Remove off site all packing materials and send them to recycling facilities.

Part 2 Products

2.1 MATERIAL

- .1 Geotextile: woven synthetic fibre fabric, supplied in rolls.
 - .1 Width: 3.5 m minimum.
 - .2 Length: 25 m minimum.
 - .3 Composed of: minimum 85% by mass of polypropylene with inhibitors added to base plastic to resist deterioration by ultra-violet and heat exposure.
- .2 Geotextile, type 1 : geotextile used to built breakwater.

Physical properties:

- .1 Thickness: to CAN/CGSB-148.1, No.3-M85, minimum 6.5 mm.
 - .2 Grab tensile strength and elongation: to CAN/CGSB-148.1, No.7.3-92.
 - .1 Breaking force: minimum 3300 N, wet condition.
 - .2 Elongation at rupture: minimum 65%.
 - .3 Ball burst strength: to CAN/CGSB-4.2, No.11.2, minimum 10 000 KPa, wet condition.
- .3 Geotextile, type II : geotextile used to built concrete panels articulated blocks to protect the slope, under the concrete wall and under granular material GM20 indicated on drawings.

Physical properties:

- .1 Thickness: to CAN/CGSB-148.1, No.3-M85, minimum 2.3 mm.
 - .2 Grab tensile strength and elongation: to CAN/CGSB-148.1, No.7.3-92.
 - .1 Breaking force: minimum 1200 N, wet condition.
 - .2 Elongation at rupture: minimum 45%.
 - .3 Ball burst strength: to CAN/CGSB-4.2, No.11.2, minimum 3150 KPa, wet condition.
- .4 Hydraulic properties:
 - .1 Filtration opening size (FOS): to CAN/CGSB-148.1 No.10-94.

Part 3 Execution

3.1 INSTALLATION

- .1 Place geotextile material by unrolling onto graded surface in orientation, manner and locations indicated and retain in position with weights and securing pins.
- .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.

3.2 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.3 PROTECTION

- .1 Vehicular traffic not permitted directly on geotextile.

END OF SECTION