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**GEOTEXTILES**

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**PART 1 GENERAL****1.1 Related Work**

- .1 Section 01330 - Submittal Procedures
- .2 Section 02315 - Excavating, Trenching and Backfilling
- .3 Section 02620 - Sub-Drainage

**1.2 References**

- .1 American Society for Testing and Materials (ASTM)
  - .1 ASTM D 4491-[99a], Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
  - .2 ASTM D 4595-[86-94], Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
  - .3 ASTM D 4716-[00], 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-[99a], 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.
    - .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/G40.21-[98], General Requirements for Rolled or Welded Structural Quality Steel.
  - .2 CAN/CSA-G164-[M92(R1998)], Hot Dip Galvanizing of Irregularly Shaped Articles.

**1.3 Samples**

- .1 Submit samples in accordance with **Section [01330 Submittals](#)**.
- .2 Submit to Consultant following samples at least 4 weeks prior to commencing work.

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- .1 Minimum length of 2 m of roll width of geotextile.
- .2 Minimum of 1 m seam with at least 300 mm of geotextile on both sides of seam.

**1.4 Mill Certificates**

- .1 Submit to Consultant 2 copies of mill test data and certificate at least 4 weeks prior to start of work.

**1.5 Delivery and Storage**

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

**1.6 Waste Management and Disposal**

- .1 Separate and recycle waste materials in accordance with **Section [01740](#) - Cleaning.**

**PART 2 PRODUCTS****2.1 Material**

- .1 Geotextile: as specified in drawings and details.
- .2 Physical properties:
  - .1 Thickness: to CAN/CGSB-148.1, No.3,
  - .2 Mass per unit area: to CAN/CGSB-148.1, Tensile strength and elongation (in any principal direction): to ASTM D 4595.
  - .3 Grab tensile strength and elongation: to CAN/CGSB-148.1, No.7.3.
  - .4 Ball burst strength: to CAN/CGSB-4.2, method 11.2,
  - .5 Bursting strength: to CAN/CGSB-148.1, No.6.1
- .3 Hydraulic properties:
  - .1 Apparent opening size (AOS): to ASTM D 4751
  - .2 Transmissivity: to ASTM D 4716,
  - .3 Permittivity: to ASTM D 4491.
- .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 CAN/CSA G164.
- .5 Factory seams: sewn in accordance with manufacturer's recommendations.

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- .6 Thread for sewn seams: equal or better resistance to chemical and biological degradation than geotextile.

**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.
- .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 Join successive strips of geotextile by sewing or gluing as per manufacturer's recommendation.
- .6 Pin successive strips of geotextile.
- .7 Protect installed geotextile material from displacement, damage or deterioration before, during and after placement of material layers.
- .8 After installation, cover with overlying layer within 4 hours of placement or as otherwise specified by manufacturer.
- .9 Replace damaged or deteriorated geotextile to approval of Consultant.

**3.2 Protection**

- .1 No vehicles permitted directly on geotextile.

**END OF SECTION - 02072**