

SECTION 31 05 19

GEOSYNTHETICS FOR EARTHWORK

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope:
 - 1. CONTRACTOR shall provide all labor, materials, equipment, and services required to provide and place geosynthetics as shown and specified.
- B. Related Sections:
 - 1. Section 31 23 05, Excavation and Fill.
 - 2. Section 31 37 00, Riprap.

1.2 REFERENCES

- A. Standards referenced in this Section are listed below:
 - 1. American Society for Testing and Materials, (ASTM).
 - a. ASTM D 1117, Test Methods for Non-Woven Fabrics.
 - b. ASTM D 3776, Test Methods for Mass per Unit Area (Weight) of Woven Fabric.
 - c. ASTM D 5034, Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test).

1.3 QUALITY ASSURANCE

- A. Manufacturer's Qualifications:
 - 1. Geotextile manufacturer shall be a specialist in the manufacture of geotextile cushion fabric, and have produced and successfully installed a minimum of five million square feet.

1.4 SUBMITTALS

- A. Action Submittals: Submit the following:
 - 1. Product Data:
 - a. Submit geotextile manufacturer's data, specifications, installation instructions and dimensions.
- B. Informational Submittals: Submit the following:
 - 1. Certificates:
 - a. Submit an affidavit certifying that the filter fabric furnished complies with all requirements specified herein.
 - b. No fabric shall be shipped until the affidavit is submitted to the ENGINEER.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Each roll of geotextile delivered to the Site shall be labeled by the manufacturer identifying the manufacturer's name, product identification, lot number, roll number and roll dimensions.
- B. All rolls and packages shall be inspected by CONTRACTOR upon delivery to the Site. CONTRACTOR shall notify ENGINEER if any loss or damage exists to geotextile filter fabric. Replace loss and repair damage to new condition, in accordance with manufacturer's instructions.
- C. Geotextile shall be protected from ultraviolet light exposure, precipitation or other inundation, mud, dirt, dust, puncture, cutting or any other damaging or deleterious conditions. Geotextile rolls shall be shipped and stored in relatively opaque and watertight wrappings.

PART 2 - PRODUCTS

2.1 GEOTEXTILE FILTER FABRIC

- A. Geotextile shall be a needle punched, nonwoven fabric composed of 100 percent polyester filaments, which are formed into a stable network such that the filaments retain their relative position. The fabric shall be inert to biological degradation and naturally encountered chemicals, alkalizes, and acids. Geotextile shall conform to the following:

<u>Fabric Property</u>	<u>Unit</u>	<u>Test Method</u>	<u>Minimum Value</u>
Weight	oz/yd ²	ASTM D 3776	10.0
Thickness	mils	ASTM D 1117	125
Grab Tensile Strength	lb	ASTM D 5034	305
Grab Strength Elongation	%	ASTM D 5034	60
Trapezoid Tear Strength	lb	ASTM D 1117	100
Water Permeability, "k"	cm/sec	CFMC GET-2	0.34
Water Flow Rate	gal/min/ft ²	CFMC GET-2	80

PART 3 - EXECUTION

3.1 INSPECTION

- A. CONTRACTOR shall examine the conditions under which the Work is to be installed and notify the ENGINEER, in writing, of conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION - GENERAL

- A. All geotextiles shall be weighted with sandbags or the equivalent when required. Such sandbags shall be installed during placement and shall remain until replaced with cover material or geomembrane.
- B. CONTRACTOR shall take any necessary precautions to prevent damage to underlying layers during placement of the geotextile.
- C. During placement of geotextiles, care shall be taken not to entrap in the geotextile stone, excessive dust, or moisture that could damage the geomembrane, generate clogging, or hamper subsequent seaming.
- D. Geotextiles shall not be exposed to precipitation prior to being installed, and shall not be exposed to direct sunlight for more than 15 days.
- E. Geotextiles shall be overlapped 12-inches.

3.3 GEOTEXTILE REPAIR

- A. Any holes or tears in the fabric shall be repaired as follows:
 - 1. On slopes: A fabric patch shall be sewn into place using a double sewn lock stitch (1/4-inch to 3/4-inch apart and no closer than 1-inch from any edge). Should any tear exceed ten percent of the width of the roll, that roll shall be removed from the slope and replaced.
 - 2. Non-slopes: A fabric patch shall be spot-seamed in place with a minimum of 24-inches of overlap in all directions.

3.4 PLACEMENT OF COVER MATERIALS

- A. CONTRACTOR shall place all cover materials in such a manner to ensure the geotextile is not damaged; minimal slippage of the geotextile on underlying layers; and no excess tensile stresses in the geotextile.

+ + END OF SECTION + +