

## SECTION 827 GEOTEXTILE

**827.01 Description.** This material consists of geotextile for use in constructing silt fence; reinforced silt fence; inlet sediment control; sediment trap outlet, riser pipe; riprap ditch; perimeter dike/swale; earth dike; temporary slope drain; stilling well; sump pit; stabilized construction entrance; portable sediment tank; geotextile lined channel diversion; dewatering basin; sediment basin outlet structure, corrugated metal; and other soil sediment and erosion control applications.

**827.02 Silt Fence.** The geotextile shall be a minimum of 360 (900 mm) wide and shall be a woven fabric consisting of long chain polymeric filaments, or yarns such as polypropylene, polyethylene, polyester, polyamide, or polyvinylidene-chloride, formed into a stable network such that the filaments or yarns retain their relative position to each other. The geotextile shall be inert to commonly encountered chemicals and shall meet the requirements listed in the following table:

**Table 827-A**

<i>Property</i>	<i>Test Method</i>	<i>Value</i> <i>(Average Minimum Roll Value)</i>
Grab Tensile Strength	ASTM D 4632	489 N
Grab Tensile Elongation	ASTM D 4632	20%
Mullen Burst Strength	ASTM D 3786	1.4 kPa
Trapezoid Tear Strength	ASTM D 4533	222 N
Slurry Flow Rate	VA DOT, VTM 51	200 mL/sec/m <sup>2</sup>
Weight	ASTM D 3776	0.02 lb/ft <sup>5</sup> (0.1 kg/m <sup>2</sup> )
Ultraviolet Stability (Strength Retained)	ASTM D 4355 after 500 hours of Xenon-Arc Type Apparatus	70%

**827.03 Reinforced Silt Fence.** The geotextile shall conform to the requirements of Subsection 827.02.

**827.04 Inlet Sediment Control.** The geotextile shall be Mirafi 140N, Linq GTF 130D, Amoco 4545, or an equal approved for use by the Department's Materials and Research Section. Table 827-B illustrates the flow rates of the various fabrics. Any material submitted as an equal must have a flow rate equal to or exceeding the minimum flow rate of those listed in the following table:

**Table 827-B**

<i>Geotextile Manufacturer</i>	<i>Geotextile Style</i>	<i>Flow Rate</i>	
		<i>gal/min/ft<sup>5</sup></i>	<i>(L/sec/m<sup>5</sup>)</i>
Mirafi	140 N	120	(82)
	4030 A	145	(99)
Amoco	4545	150	(102)
	4535	155	(105)
Linq	103 EX	140	(95)
	125 EX	150	(102)

**827.05 Riser Pipe Assembly for Sediment Trap.** The geotextile shall conform to the requirements of Subsection 827.04.

**827.06 Riprap Ditch.** The geotextile shall be Mirafi 700X or Erosion 1 manufactured by Synthetic Industries, Linq GTF 400E or Poly-Filter X manufactured by Carthage Mills, TerraTex Ep manufactured by WEBTEC, Inc., or an equal approved by the Department's Materials and Research Section.

**827.07 Perimeter Dike/Swale.** The geotextile shall conform to the requirements of Subsection 827.06.

**827.08 Earth Dike.** The geotextile shall conform to the requirements of Subsection 827.06.

**827.09 Temporary Slope Drain.** The geotextile shall conform to the requirements of Subsection 827.06.

**827.10 Stilling Well.** The geotextile shall conform to the requirements of Subsection 827.06.

**827.11 Sump Pit.** The geotextile shall conform to the requirements of Subsection 827.04.

**827.12 Stabilized Construction Entrance.** The geotextile shall be woven or nonwoven and shall consist only of continuous chain polymer filaments or yarns of polyester. The geotextile shall be inert to commonly encountered chemicals and hydrocarbons, be mildew and rot resistant, and shall conform to the properties of the following table:

**Table 827-C**

<i>Fabric Properties</i>	<i>Traffic</i>		<i>Test Method</i>
	<i># 3 Axles</i>	<i>&gt; 3 Axles</i>	
Grab Tensile Strength	890 N	980 N	ASTM D 4632
Elongation at Failure	50%	220%	ASTM D 4632
Mullen Burst Strength	845 N	1.9 kN	ASTM D 3786
Puncture Strength	178 N	556 N	ASTM D 751, Modified
Equivalent Opening Size	180 to 425 μm	180 to 425 μm	Standard Sieve CW-02215

**827.13 Portable Sediment Tank.** The geotextile shall conform to the requirements of Subsection 827.04.

**827.14 Geotextile Lined Channel Diversion.** The geotextile shall conform to the requirements of Subsection 827.06.

**827.15 Dewatering Basin.** The geotextile shall conform to the requirements of Subsection 827.06.

**827.16 Sediment Basin Outlet Structure, Corrugated Metal.** The geotextile shall conform to the requirements of Subsection 827.04.