



SECTION 1011

GEOTEXTILE

1011.1 Scope. This specification covers geotextile for use in subsurface drainage, sediment control and erosion control, or as a permeable separator.

1011.2 Acceptance. Acceptance of the material will be based on the manufacturer's certification and upon the results of such tests as may be performed by the engineer.

1011.3 Material. Geotextiles shall be in accordance with the physical and chemical requirements of AASHTO M 288 for the specified application, except as modified in this specification.

1011.3.1 Subsurface Drainage Geotextile. Subsurface drainage geotextile shall be used in subsurface drainage as a filter to protect drainage media from clogging with fines from adjacent soil. Typical applications include the lining of drainage trenches and the wrapping of drainpipes.

1011.3.1.1 The minimum permittivity shall be 1.0 sec^{-1} .

1011.3.1.2 The material shall be AASHTO Class 2.

1011.3.2 Temporary Silt Fence Geotextile. Temporary silt fence geotextile shall be used in supported or non-supported sediment control fencing.

1011.3.3 Permanent Erosion Control Geotextile. Permanent erosion control geotextile shall be used when the erosion control measure will not be removed, such as erosion control of slopes and channels when placed under a rock blanket, rock ditch liner, etc.

1011.3.3.1 The minimum permittivity shall be 1.0 sec^{-1} .

1011.3.3.2 The material shall be either AASHTO Class 1 or Class 2.

1011.3.4 Separation Geotextile. Separation geotextile shall be used as a separation material to prevent mixing of dissimilar material, and to control migration of backfill material through joints in structural elements.

1011.3.4.1 The minimum permittivity shall be 1.0 sec^{-1} .

1011.3.4.2 The material shall be AASHTO Class 1.

1011.3.5 Erosion Control Blankets. Erosion control blankets (ECB) shall be certified by the manufacturer to meet the following criteria:

ECB Type	Netting Type	Longevity	Slopes	Soil Type
Type 1	Single, Quickly degradable	45-60 days	3:1 or flatter	Clay
Type	Single	12 months	3:1 or	Sandy

2	Photodegradable		flatter	
Type 3	Double Photodegradable	12-18 months	2:1 or flatter	Clay
Type 4	Double Photodegradable	24 months	2:1 or flatter	Sandy
Type 5	Double Photodegradable	36 months	1:1 or flatter	Any

1011.3.6 Turf Reinforcement Mats. Turf reinforcement mats (TRM) shall be certified by the manufacturer for open flow channels and shall meet the following calculated shear stress:

TRM Type	Calculated Shear Stress (lbs/ft ²)
Type 1	3.5 – 6
Type 2	6.1 – 8
Type 3	8.1 – 10
Type 4	10.1 or greater

1011.3.7 Unbonded Concrete Overlay Interlayer. Unbonded concrete overlay interlayers shall have the following material properties:

Property	Requirement	Test Method
Fabric Type	Non-woven Geotextile	
Mass per unit area	Min. 14.8 oz/sq.yd	ASTM D 5261
Thickness under load (pressure)	0.29 psi: ≥ 0.12 in 2.9 psi: ≥ 0.10 in 29 psi: ≥ 0.04 in	ASTM D 5199, modified under loads of 0.29, 2.9, and 29 psi
Tensile strength	≥ 685 lb/ft	ASTM D 4595
Maximum elongation	≤ 130%	ASTM D 4595
Water permeability in normal direction under load (pressure)	≥ 3.3×10 ⁻⁴ ft/s [under pressure of 2.9 psi]	ASTM D 5493
Water permeability in the plane direction of the fabric (transmittivity) under load (pressure)	≥ 1.6×10 ⁻³ ft/s [under pressure of 2.9 psi] ≥ 6.6×10 ⁻⁴ ft/s [under pressure of 29 psi]	ASTM D 6574
Weather resistance	Resistance ≥ 60%	EN 12224
Alkali resistance	≥ 96% Polypropylene/Polyethylene	

1011.4 Certification. The contractor shall furnish a manufacturer's certification to the engineer for each lot of material furnished stating the name of the manufacturer, the chemical

composition of the filaments or yarns and certifying that the material supplied is in accordance with this specification. The certification shall include or have attached typical results of tests from specific lots for all specified requirements.