

918-M-053 GEOTEXTILES PROPERTIES

(Adopted 12-19-19)

The Standard Specifications are revised as follows:

SECTION 918, BEGIN LINE 30, DELETE AND INSERT AS FOLLOWS:

The geotextile shall meet the following requirements:

(a) Geotextile Properties for Riprap and Revetment Applications

Test	Method, ASTM	Requirements ⁽¹⁾				
		Type 1A	Type 1B	Type 2A	Type 2B	Type 3
Grab Tensile Strength, min.	D 4632	200 lbs	200 lbs	250 lbs	300 lbs	250 lbs
Grab Elongation	D 4632	≥ 50%	< 50%	≥ 50%	< 50%	< 50%
CBR Puncture Strength, min.	D 6241	500 lbs	600 lbs	625 lbs	1000 lbs	875 lbs
Trapezoid Tear Strength, min.	D 4533	80 lbs	75 lbs	100 lbs	150 lbs	60 lbs
UV Degradation Resistance 500 hrs, min.	D 4355 D 6637	70%	70%	70%	70%	90%
Apparent Opening Size, AOS	D 4751	≤ No. 80 sieve, for soils ≥ 40% passing the No. 200 sieve	≤ No. 40 sieve, for soils < 40% passing the No. 200 sieve	≤ No. 100 sieve, for soils ≥ 40% passing the No. 200 sieve	≤ No. 40 sieve, for soils < 40% passing the No. 200 sieve	≤ No. 70 sieve
Permittivity	D 4491	≥ 1.2 sec ⁻¹	≥ 2.1 sec ⁻¹	≥ 0.80 sec ⁻¹	≥ 0.90 sec ⁻¹	0.28 sec ⁻¹
Note: (1) All values are minimum average roll values (MARV) as determined in accordance with ASTM D 4354 in the weaker principal direction, except AOS size is based on maximum average roll value.						

(b) Geotextile Properties for Underdrains and Drainage Applications

Test	Method, ASTM	Requirements ⁽¹⁾⁽²⁾				
		Type 1A	Type 1B	Type 2A	Type 2B	Type 3
Grab Tensile Strength, min.	D 4632	80 lbs	200 lbs	160 lbs	200 lbs	200 lbs
Grab Elongation	D 4632	≥ 50%	< 50%	≥ 50%	< 50%	< 50%
CBR Puncture Strength, min.	D 6241	175 lbs	600 lbs	410 lbs	750 lbs	1100 lbs
UV Degradation Resistance 500 hrs, min.	D 4355 D 6637	70%	70%	70%	70%	90%
Apparent Opening Size, AOS	D 4751	≤ No. 50 sieve, for soils ≥ 40% passing the No. 200 sieve	≤ No. 40 sieve, for soils < 40% passing the No. 200 sieve	≤ No. 70 sieve, for soils ≥ 40% passing the No. 200 sieve	≤ No. 30 sieve, for soils < 40% passing the No. 200 sieve	≤ No. 40 sieve
Permittivity, min.	D 4491	≥ 1.2 sec ⁻¹	≥ 2.1 sec ⁻¹	≥ 0.8 sec ⁻¹	≥ 1.5 0.9 sec ⁻¹	0.90 sec ⁻¹
Notes: (1) All values are minimum average roll values (MARV) as determined in accordance with ASTM D 4354 in the weaker principal direction, except AOS size is based on maximum average roll value. (2) Type 3 value is a maximum average roll value (Max ARV) as determined in accordance with ASTM D 4354.						

(c) Geotextile Properties for Pavement or Subgrade Stabilizations

Test	Method, ASTM	Requirements ⁽¹⁾			
		Type 1A	Type 1B	Type 2A	Type 2B
Grab Tensile Strength, min.	D 4632	200 lbs	300 lbs	350 290 lbs	400 lbs
Wide Width Tensile, @ 5% Strain, min.	D 4595	n/a	n/a	1200 lbs/ft	2400 lbs/ft
Grab Elongation	D 4632	≤ 50%	< 50%	≤ 50%	< 50%
CBR Puncture Strength, min.	D 6241	175 lbs	600 lbs	410 lbs	750 lbs
Trapezoid Tear Strength, min.	D 4533	75 lbs	110 lbs	n/a	n/a
UV Degradation Resistance 500 hrs, min.	D 4355 D 6637	70% retained	70% retained	70% retained	70% retained
Apparent Opening Size, AOS, min.	D 4751	sieve No. 50	sieve No. 40	sieve No. 30	sieve No. 30
Soil Retention, Pore Size, O ₅₀ /O ₉₅ , min.	D 6767	n/a	n/a	290/380	320/460 100/ 350
Permittivity, min.	D 4491	0.05 sec ⁻¹	0.050 sec ⁻¹	0.60 0.50 sec ⁻¹	0.40 sec ⁻¹
Notes: (1) All values are minimum average roll values (MARV) as determined in accordance with ASTM D 4354 in the weaker principal direction, except AOS size is based on maximum average roll value.					