

Mirafi® N-Series Nonwoven Polypropylene Geotextiles for Soil Separation and Drainage

TenCate develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

The Difference Mirafi® N-Series Nonwoven Geotextiles Make:

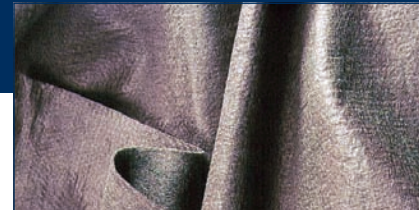
- **Construction.** Mirafi® N-Series polypropylene nonwoven geotextiles easily conform to the ground or trench surface for trouble-free installation.
- **Strength.** Mirafi® N-Series geotextiles withstand installation stresses with high puncture and tear resistance.
- **Drainage.** High permittivity properties provide high water flow rates while providing excellent soil retention.
- **Environmental.** Mirafi® N-Series geotextiles are chemically stable in a wide range of aggressive environments.
- **Cost Effective.** Mirafi® N-Series geotextiles provide economical solutions to many civil engineering applications including a cost effective alternative to graded aggregate filters.

APPLICATIONS

Mirafi® N-Series nonwoven geotextiles are used in a wide variety of applications including soil separation and drainage applications. Lightweight nonwovens are predominantly used for subsurface drainage applications along highways, within embankments, under airfields, and athletic fields. For these drainage structures to be effective, they must have a properly designed protective filter.

Mirafi® N-Series nonwoven geotextiles eliminates the challenge of determining the aggregate gradation required to match soil conditions, finding a convenient and economical source of a specific aggregate, transporting and placing graded aggregate, and assuring that the constructed in-place drainage system provides effective filter performance.

Heavyweight nonwovens are used in critical subsurface drainage systems, soil separation, permanent erosion control, and geomembrane liner protection within landfills. These geotextiles provide the required strength and abrasion resistance to withstand installation and application stresses to create an effective, long term drainage solution.



Mirafi® N-Series Nonwoven Geotextiles

INSTALLATION GUIDELINES*

French and Trench Drains Geosynthetic Placement
Cut geosynthetic to proper width prior to placement. Width should be enough to conform to the trench perimeter with at least a 15cm (6in) top overlap. Place the geosynthetic roll over the trench, and unroll enough geosynthetic that the geosynthetic can be placed down into the trench. Anchor the edges of the geosynthetic with heavy objects to prevent the geosynthetic from falling into the trench. Where overlaps are necessary between rolls, allow for 1m (3ft) overlap from the upstream to the downstream roll.

* These guidelines serve as a general basis for installation. Detailed instructions are available from your TenCate® representative.

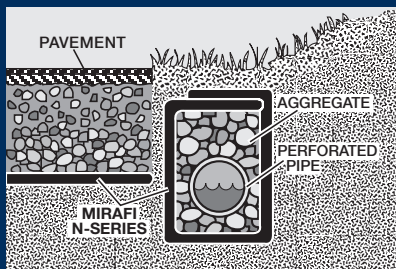


Mirafi® N-Series Nonwoven Polypropylene Geotextiles for Soil Separation and Drainage

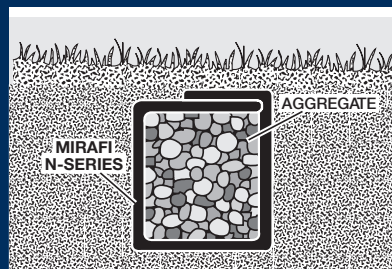
Property / Test Method	Units	140NL	140NC	140N	160N	170N	180N	1100N	1120N	1160N
MECHANICAL PROPERTIES										
Grab Tensile Strength ASTM D4632										
Strength	lbs (N)	90 (401)	100 (445)	120 (534)	160 (712)	180 (801)	205 (912)	250 (1113)	300 (1335)	380 (1691)
Elongation	%	50	60	50	50	50	50	50	50	50
Trapezoid Tear Strength ASTM D4533										
	lbs (N)	40 (178)	45 (200)	50 (223)	60 (267)	75 (334)	80 (356)	100 (445)	115 (512)	140 (623)
CBR Puncture Strength ASTM D6241										
	lbs (N)	250 (1113)	250 (1113)	310 (1380)	410 (1825)	450 (2003)	500 (2224)	700 (3115)	800 (3560)	1025 (4561)
UV Resistance after 500 hrs. ASTM D4355										
	% strength	70	70	70	70	70	70	70	70	70
HYDRAULIC PROPERTIES										
Apparent Opening Size (AOS) ASTM D4751										
	US Sieve	60	70	70	70	70	80	100	100	100
	mm	(0.25)	(0.212)	(0.212)	(0.212)	(0.212)	(0.18)	(0.15)	(0.15)	(0.15)
Permittivity ASTM D4491										
	sec ⁻¹	2.0	2.0	1.7	1.5	1.4	1.4	0.8	0.8	0.7
Flow Rate ASTM D4491										
	gal/min/ft ² (l/min/m ²)	145 (5907)	140 (5704)	135 (5500)	110 (4481)	105 (4278)	95 (3870)	75 (3056)	65 (2648)	50 (2037)
Packaging										
Roll Width	ft (m)	12.5 (3.8) 15.0 (4.6)	12.5 (3.8) 15.0 (4.6)	12.5 (3.8) 15.0 (4.6)	15.0 (4.6)	15.0 (4.6)	12.5 (3.8) 15.0 (4.6)	15.0 (4.6)	15.0 (4.6)	15.0 (4.6)
Roll Length	ft (m)	360 (110)	360 (110)	360 (110)	300 (91)	300 (91)	300 (91)	300 (91)	300 (91)	150 (46)
Est. Gross Weight	lbs (kg)	133 (60) 160 (70)	139 (63) 167 (76)	139 (63) 167 (76)	199 (90)	222 (101)	248 (113)	358 (162)	374 (170)	232 (105)
Area	yd ² (m ²)	500 (418) 600 (502)	500 (418) 600 (502)	500 (418) 600 (502)	500 (418)	500 (418)	500 (418)	500 (418)	500 (418)	250 (209)

*NOTE: Mechanical Properties and Hydraulic Properties shown are Minimum Average Roll Values (MARV). Apparent Opening Size (AOS) properties shown are Maximum Average Roll Values. (Values and methods could change without notice)

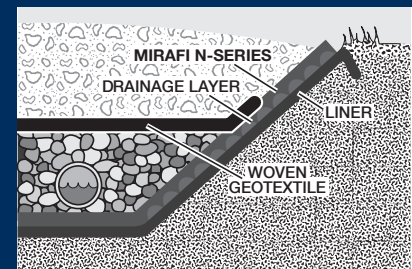
Mirafi® N-Series Nonwoven Geotextiles



**Cut-off/Interceptor Drain Along a Roadway
Or Another Critical Structure**



French Drain Without Pipe



Liner Protection Within a Landfill

TenCate Geosynthetics Americas assumes no liability for the accuracy or completeness of this information or for the ultimate use by the purchaser. TenCate Geosynthetics Americas disclaims any and all express, implied, or statutory standards, warranties or guarantees, including without limitation any implied warranty as to merchantability or fitness for a particular purpose or arising from a course of dealing or usage of trade as to any equipment, materials, or information furnished herewith. This document should not be construed as engineering advice.

Mirafi® is a registered trademark of Nicolon Corporation.

© 2013 Nicolon Corporation. All Rights Reserved.

PDS.N0114

365 South Holland Drive Tel 800 685 9990 Fax 706 693 4400
Pendergrass, GA 30567 Tel 706 693 2226 www.mirafi.com



TENCATE
materials that make a difference