LAYFIELD GEOSYNTHETICS

TECHNICAL SPECIFICATIONS

MIRAFI® RS*i*-SERIES - GEOTEXTILES

High-strength geotextiles extend the expected life of your roads by preventing the mixing of fill and subsoil and reducing the amount of fill required. Specially designed for base course reinforcement and subgrade stabilization for roadways and similar applications, high-strength geotextiles are woven from high-tenacity polypropylene or polyester fibers (or a blend of both).

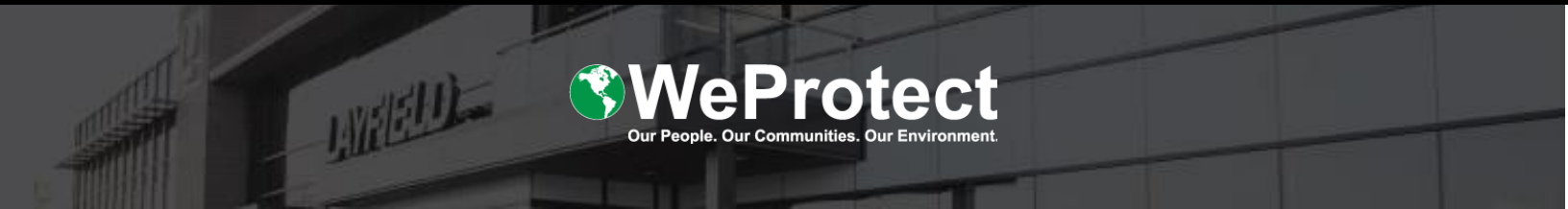
The geosynthetic's distinctive profile features an unparalleled ridge-to-valley design, ensuring surface roughness across its entire area. This design facilitates micro-interlocking through friction, fostering excellent interaction between the underlying subgrade and overlying materials.

MIRAFI RS580*i and RS380i* have been fully calibrated in full-scale industry lead design methodologies for flexible pavement designs (AASHTO 93) and unpaved road designs incorporating geosynthetics.

July 2024

MIRAFI® RS*i* - Series

		ASTM	**RS580*i***	**RS380*i***	**RS280*i***
Material Properties	**MECHANICAL Properties**				
	Tensile Strength @ 2% strain (CD)	D4595	26.3 kN/m 1800 lb/ft	14.9 kN/m 1020 lbs/ft	9.6 kN/m 660 lbs/ft
	Tensile Strength @ 5% strain (CD)	D4595	63.9 kN/m 4380 lb/ft	32.9 kN/m 2,256 lb/ft	23.8 kN/m 1632 lbs/ft
	CBR Puncture Strength	D6241	8,674 N 1,950 lb	7,877 N 1,770 lb	5,785 N 1,300 lb
	UV Resistance (500 Hours) % Strength retained	D4355	90	90	90
	HYDRAULIC Performance				
	Flow Rate	D4491	3056 l/min/m^2 75 gal/min/ft^2	3056 l/min/m^2 75 gal/min/ft^2	2852 l/min/m^2 70 gal/min/ft^2
	Permittivity	D4491	0.9 sec^{-1}	0.9 sec^{-1}	0.9 sec^{-1}
	Vertical Capillary Wicking Rise (CD)	GRI GS27	100mm after 10 min. 4 inches after 10 min.	98mm after 10 min. 3.8 inches after 10 min.	N/A
	Contact Angle of Wicking Yarns	D5946	< 90 degrees	< 90 degrees	N/A
	Surface Area of Wicking Yarns	Calculated	15 (cm^2/g) 65 (in^2/oz	16 (cm^2/g) 70 (in^2/oz	N/A
Perm	Apparent Opening Size (AOS)	D4751	0.425 mm 40 US sieve	0.425 mm 40 US sieve	0.425 mm 40 US sieve



MIRAFI® RS*i*-SERIES - GEOTEXTILES

ROADWAY DESIGN AND PERFORMANCE PROPERTIES				
Base Course M_R Improvement Factor[1]	AASHTO R50-09	1.40	1.3	Not Calibrated
Traffic Benefit Ratio: TBR[2,3,4]	AASHTO R50-09	9.0 / 13.1 / 39.0	3.9 / 5.2 / 21.7	Not Calibrated
Pore Size Distribution (microns)	D6767	O_{95} = 394 O_{50} = 208	O_{95} = 392 O_{50} = 195	O_{95} = 360 O_{50} = 220
Interaction Coefficient : C_i[5] (microns)	D6706	0.90	0.89	0.89
Void ratio, *e*	Calculated	0.77	0.76	N/A
PHYSICAL Properties				
Roll Dimensions		4.5 m X 91.4 m 15 ft X 300 ft 5.2 m x 91.4 m 17 ft x 300 ft	4.5 m X 91.4 m 15 ft X 300 ft 5.2 m x 91.4 m 17 ft x 300 ft	4.5 m X 91.4 m 15 ft X 300 ft 5.2 m x 91.4 m 17 ft x 300 ft
Estimated Roll Weight		186 kg 410 lbs	157 kg 348 lbs	122.5 kg 270 lbs

RS580i , RS380i NOTES:

[1] Value Determined from Results of Independent Testing Performed at Kansas State University in accordance with NCHRP Report 512 "Accelerated Pavement Testing: Data Guidelines" and AASHTO R50-09 Geosynthetic Reinforcement of the Aggregate Base Course of Flexible Pavement Structures." Multiplier for Unbound Granular Material; for SG MR between 4.5 and 6.9 ksi (30.9 and 47.4 MPa).

[2] Value Determined from Results of Independent Testing Performed at GeoTesting Express (GeoComp) "A Laboratory Evaluation of the Performance of TenCate Mirafi® Geosynthetics in Roadway Stabilization Applications – Georgia Silt Subgrade," September 1, 2011. 9-kip {40 kN} Wheel Load, SG CBR = 1%, 12-inch (300-mm) Crushed Aggregate BC (CBR > 25%), 3-inch (75-mm) Rut Depth.

[3] Value Determined from Results of Independent Testing Performed at LTRC "Performance of Reinforced–Stabilized Unpaved Test Sections Built Over Native Soft Soil Under Full-Scale Moving Wheel Loads," TRR Volume 2511, 2015. Measured at 0.34-inch (8.64 mm) Rut Depth; Peak Pore Pressure 6-inches (150 mm) Below Geosynthetic.

[4] Value Determined from Results of Independent Testing Performed at GeoTesting Express (GeoComp) "A Laboratory Evaluation of the Performance of TenCate Mirafi® Geosynthetics in Roadway Stabilization Applications – Montana Clay Subgrade," September 1, 2011. 9-kip (40 kN) Wheel Load, SG CBR = 1.8%, 8-inch (200-mm) Rounded Aggregate BC (CBR > 25%), 3-inch (75-mm) Rut Depth.

[5] Interaction Coefficient value is for sand (SP) or gravel (GW) based on testing conducted by SGI Testing Services.

[6] Modified