

ALYAF NONWOVEN GEOTEXTILES - A1 SERIES

ALYAF nonwoven high performance geotextiles are proudly manufactured in Saudi Arabia from the finest raw materials produced by the advanced local petrochemical industry. Using a unique state of the art needle punching technology, the porosity level of ALYAF geotextiles is tailored to meet specific application requirements.

APPLICATION AREAS

ALYAF geotextiles are used in road and railway soil stabilization, waterways and seashore erosion control, asphalt pavement overlay crack relief, subsurface drainage systems, waterproofing membrane protection, landfill, landscaping etc.

GEOTEXTILE FUNCTIONS

- ◆ **Separation** between two dissimilar materials so that the integrity and functioning of both materials can remain intact or be improved.
- ◆ **Filtration** by permitting water flow across the plane of the geotextile while retaining fine soil particles.
- ◆ **Transmission** by providing water drainage and gas venting within the plane of the geotextile.
- ◆ **Sealing** when impregnated with asphalt or resin to act as a moisture barrier.
- ◆ **Stress Absorption** in pavement overlay when impregnated with asphalt.
- ◆ **Protection** of geomembrane against puncture by absorbing the point stresses.

PERFORMANCE PROPERTIES

1) Hydraulic Properties include opening size, permeability and transmissivity. For optimum filtration, the geotextile is required to meet two seemingly conflicting requirements: the geotextile pore spaces must be small enough to retain soil particles while also being large enough to permit relatively unimpeded water flow. **ALYAF** geotextiles meet this requirement and have exceptionally high filtration properties due to the needle punching process, which produces a large number of small holes in the fabric structure. This process provides **ALYAF** geotextiles with superior filtration properties, offering a unique combination of high permeability that allows unimpeded flow of water across the fabric whilst maintaining a low opening size to retain the finest soil particles without becoming clogged over time

2) Survivability Properties refer to the ability of the geotextile to withstand the installation stresses and to perform as intended in the design. The survivability properties include puncture resistance, dynamic puncture, CBR puncture and Mullen burst strengths. ALYAF geotextiles, due to their high elongation property, are inherently more resistant to installation damage than stiff low elongation fabrics. The high elongation property of ALYAF geotextiles allows the fabric to adapt to the uneven contour of the matrix and absorb the installation stresses, unlike stiff geotextile fabrics with low elongation that tend to carry the installation loads and hence are required to meet a set of higher strength values compared with high elongation geotextiles. The geotextile fabric in the tensile, grab and trapezoidal tear tests is stressed in a linear direction along its plane, and hence these index test values need necessarily be considered in conjunction with elongation values.

PRODUCT DESCRIPTION

Nonwoven geotextile made from staple fibers that are mechanically bonded by a needle punching process to produce a dimensionally stable network. The fibers used are 100% virgin white polyester, ultra-violet resistant with 256°C melting point. **ALYAF** geotextiles are manufactured according to our Quality System procedures that have been assessed and certified in accordance to ISO 9001-2000 by TUV CERT Certification body.

BIOLOGICAL & CHEMICAL RESISTANCE

ALYAF geotextiles are non-biodegradable, and have excellent resistance to chemicals and salts normally present in the soil.

EXPOSURE TO SUNLIGHT

Test Method	AASHTO Specification	ALYAF A1 Series
ASTM D4355	>50% strength at 500 hours	>60% strength at 500 hours

ALYAF geotextiles are delivered in black PE wrap for protection against UV-rays during transit and storage.

PRODUCT RANGE

Besides ALYAF standard geotextile products indicated in this data sheet, a variety of grades between 40 g/m and 1200 g/m² is also available in polyester and thermally bonded as well as polypropylene based geotextiles. Data sheets of ALYAF other products are available upon request.



ALYAF INDUSTRIAL CO. LTD.

P.O. Box 10737, Dammam 31443, Saudi Arabia
Telephone No. +966 3 812 1206, Fax No. +966 3 812 1836,
Email: alyaf@saudionline.com.sa





ALYAF



Nonwoven Geotextiles - A1 Series Technical Data

Properties		Test Method	Unit	A201	A221	A241	A281	A301	A351	A381	A401	A451	A501	A551	A601	A701	A901	AX11
Functional	CBR Puncture	EN ISO 12236	N	1000	1200	1400	1800	2000	2500	2800	3200	3500	4000	4500	5100	6100	8100	10000
	Puncture Strength	ASTM D 4833	N	180	220	260	330	420	550	690	700	850	950	1100	1200	1500	2000	2400
	Dynamic Puncture	EN 918	mm	30	26	22	19	18	14	14	12	9	8	7	5	0	0	0
	Mullen Burst	ASTM D 3786	PSI	130	160	185	290	300	360	400	450	530	630	700	770	900	1100	1300
	Elongation at 30% Load	EN 29073-3	%	30	30	30	30	30	30	30	30	30	30	35	35	35	35	35
	Flow Rate (10cm Head)	BS 6906 Part 3	l/m ² /s	240	200	190	120	100	95	90	85	75	55	50	45	40	35	30
	Permeability	ASTM D 4491	cm/s	0.35	0.32	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	Transmissivity (2kN/m ²)	ASTM D 4716	l/m/h	100	120	140	160	170	185	190	200	200	220	240	300	340	380	420
	Opening Size (O ₉₅)	ASTM D 4751	micron	106	106	106	75	75	75	75	75	75	75	75	75	75	75	75
Index	Tensile - 5cm Strip (CD)	EN 29073-3	N	200	280	340	630	700	900	1100	1200	1500	1800	2000	2100	2800	3100	3800
	Tensile - 5cm Strip (MD)	EN 29073-3	N	170	235	280	380	420	520	600	700	820	850	1050	1100	1300	1700	2000
	Minimum Elongation	EN 29073-3	%	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	Grab Strength (CD)	ASTM D 4632	N	215	290	340	520	700	900	1100	1180	1500	1750	2000	2100	3000	3200	3500
	Grab Strength (MD)	ASTM D 4632	N	190	250	300	400	470	600	700	800	930	1000	1150	1200	1500	1800	2100
	Min. Grab Elongation	ASTM D 4632	%	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
	Trapezoidal Tear (CD)	ASTM D 4533	N	110	140	160	250	340	430	500	530	580	900	900	1000	1200	1500	1800
Trapezoidal Tear (MD)	ASTM D 4533	N	100	120	140	180	200	250	280	300	350	400	450	500	650	800	1000	
Physical	Thickness (2kN/m ²)	ASTM D 5199	mm	1.4	1.6	1.8	2.2	2.5	2.7	3.0	3.2	3.5	3.8	4.2	4.7	5.2	7.0	8.5
	Mass Per Unit Area	ASTM D 5261	g/m ²	100	120	140	180	200	250	280	300	350	400	450	500	600	800	1000
	Roll Size (W x L)	-	m	3 x 100	3 x 100	3 x 100	3 x 100	3 x 100	3 x 100	3 x 100	3 x 100	3 x 100	3 x 100	3 x 100	3 x 100	3 x 100	3 x 50	3 x 50

Values reported in this data sheet are indicative average results obtained in our laboratory and independent testing laboratories. The right is reserved to make changes at any time without notice.