

MAKAREM TEX

Geotextile

Non-wovens



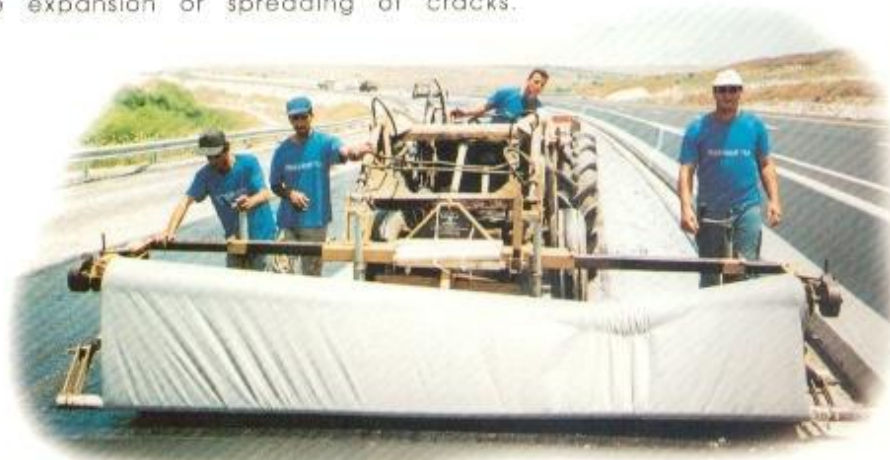
DILO - GERMANY TECHNOLOGY



Application 1

Prevention of Crack Expansion

This technology is based on the spreading and affixing of Makarem Tex Fabrics (Type A 100% Polyester) on a split asphalt layer and laying a new asphalt layer over the fabric. The same process can be used when paving a new road. Makarem Tex Fabrics prevent crack expansion and create an insulated layer which prevents water penetration between the asphalt layers thus protecting the structure of the road. This solution has proven its effectiveness in containing the expansion or spreading of cracks.



Application 2

Drainage / Sports Field

Maintenance of sports fields demands preservation of the humidity level of the soil for both growth and rapid drainage. Makarem Tex Fabrics provide ideal separation and drainage capabilities between the upper layer of sand and granular drainage level.





Application 3

Insulation of Reservoirs, Waste Sites



HID Insulated Polyethylene Fabrics and Non-Woven Geotextile Fabrics are vital in the planning and building of reservoirs and waste sites.

Non-woven fabrics serve a number of important roles:

- A.** Mechanical defense of insulation fabrics (H.D.P.E.) against tearing or permeation from sharp objects. Worldwide, geotextile fabrics are used for heavy-weight (500-700 gr. /sq.m) surface distribution instead of clay.
- B.** Insulation of the drainage area in case of possible leakage and funnelling of the liquids to the appropriate drainage opening.
- C.** Collection and lateral pathway for gases which collect beneath the insulation fabric (a common application of non-woven fabrics in waste sites).



Application 4

Defense of River Embankments/Shores



Distribution of different mats of rocks and stones in a widely accepted method of erosion control at river embankments and shores. Makarem Tex Fabrics distributed just beneath the surface serve as a filter thus preventing erosion.

MAKAREM TEK

Non-woven Needlepunched Engineered Fabrics

Property	Test Method	UNITS	150	180	200	250	280	300	350	400	450	500	600	800	1000
Fabric Weight	ASTM D - 5261	g/m ²	150	180	200	250	280	300	350	400	450	500	600	800	1000
Thickness Under 2KN/m ²	ASTM D - 5199	mm	1.9	2.2	2.5	2.7	3.0	3.2	3.5	3.8	4.2	4.7	5.2	7.0	8.5
Grab Tensile Strength (M.D)	ASTM D - 4632	N	320	400	470	600	700	800	930	1000	1150	1200	1500	1800	2100
Grab Tensile Strength (C.D)	ASTM D - 4632	N	370	520	700	900	110	1180	1500	1750	2000	2100	3000	3200	3500
Grab Elongation	ASTM D - 4632	%	>100	>100	>100	>100	>100	>100	>100	>100	>100	>90	>85	>80	>75
Strip Tensile Strength (M.D)	EN 29073 - 3	N	310	380	420	520	700	700	820	850	1050	110	1300	1700	2000
Strip Tensile Strength (C.D)	EN 29073 - 3	N	400	630	700	900	1200	1200	1500	1800	2000	2100	2800	3100	3800
Puncture Strength	ASTM D - 4833	N	280	330	420	550	690	700	850	950	1100	1200	1500	2000	2400
Mullen Burst	ASTM D - 3786	SPI	200	290	300	360	400	450	530	630	700	770	900	1100	1300
Trapezoidal Tear (M.D)	ASTM D - 4533	N	150	180	200	250	280	300	350	400	450	500	650	800	1000
Trapezoidal Tear (C.D)	ASTM D - 4533	N	180	250	340	430	500	530	580	900	900	1000	1200	1500	1800
C.B.R. Test	BS 6906 - 4	N	1500	1800	2000	2500	2800	3200	3500	4000	4500	5100	6100	8100	10000
Apparent Opening Size	ASTM D - 4751	micron	110	75	75	75	75	75	75	75	75	75	75	75	75
Permeability	ASTM D - 4491	Cm/S	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	150	160	170	185	190	200	200	220	300	300	380	380	420



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The values provided in this chart are means based on tests by Egyptian Standards. There may be variations of +/- 10% (mechanical values) and up to +/- 20% (hydraulic values) between the chart and the actual fabrics.