NASK

ناسك للصناعة الجيوتكستايل ذ.م.م

GEOTEXTILE INDUSTRIES W.L.L

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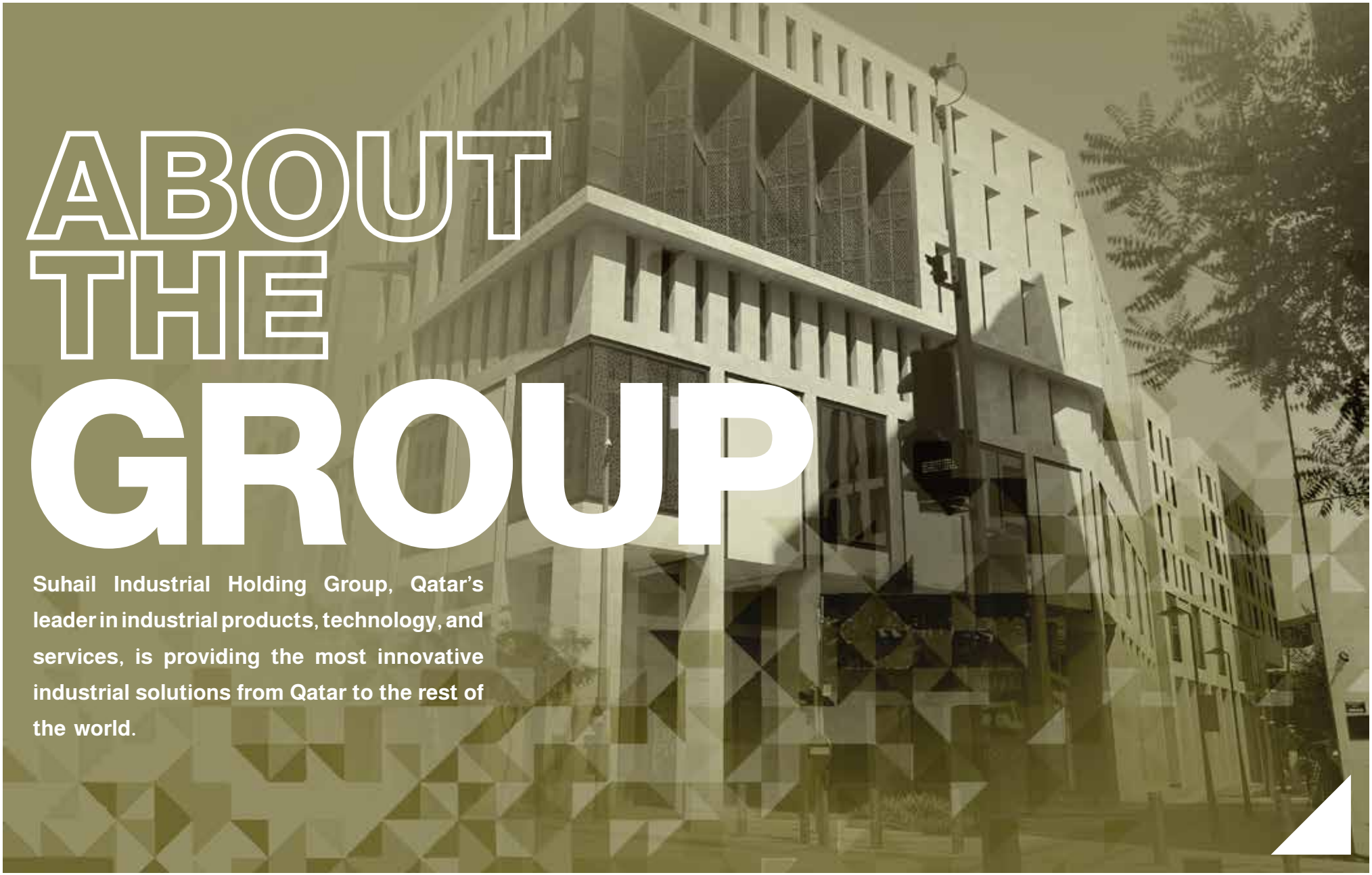


ABOUT THE GROUP

Suhail Industrial Holding Group, Qatar's leader in industrial products, technology, and services, is providing the most innovative industrial solutions from Qatar to the rest of the world.

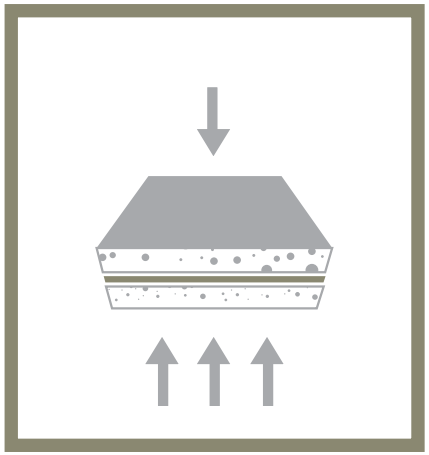
ABOUT US

The geotextile fabric is a synthetic permeable nonwoven textile material used with soil, rock, or any other geotechnical engineering related material, made from either polypropylene or polyester staple fibers that are needle punched in a random pattern to create a resilient fabric that has a felt-like look and feel. The fibers can be bonded together by adopting thermal, or mechanical techniques or a combination of techniques.

Geotextiles have had a long history of use in filtration, drainage, separation, protection, reinforcement, and erosion control applications in a range of civil, coastal, and environmental engineering structures, construction and landscaping industries and making a mark by stabilizing the ground, improving a sites drainage and filtration, separating aggregates and spreading imposed loads. Non-woven geotextiles can be used to strengthen roads, driveways, and paths by adding strength and stability under asphalt layers and concrete paving stones. This keeps sinkholes from forming when heavy vehicles drive over soft soils without a protective layer.

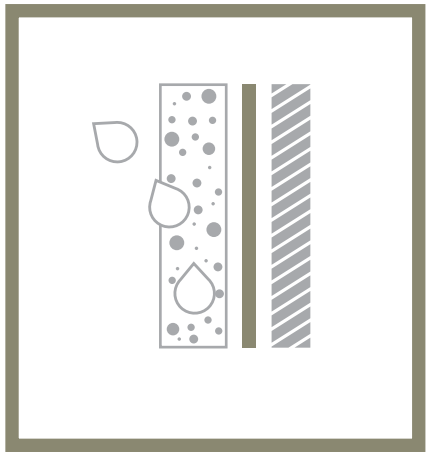
With high tensile strength, surface texture, UV resistance, chemical and biological degradation inert, NASK Geotextiles are a boon to roads and highways, increasing their lifespan by strengthening and supporting aggregates.

FUNCTIONS OF NASK GEOTEXTILES



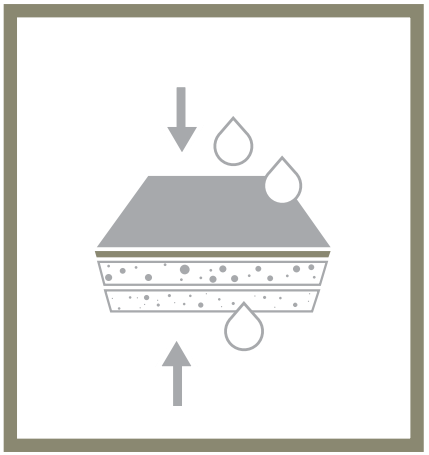
Separation

Separation is a process of preventing intermixing of adjacent dissimilar soils or fill. The migration of fine soil particles into the clean aggregate occurs especially under dynamic stress and is called Pumping effect. NASK Geotextile when placed between the aggregate and the subgrade acts as a separator, minimizing contamination of the aggregate base by the subgrade and avoiding pumping up of fine-grained subgrade soils with aggregate base thus preventing the reduction of load bearing capacity.



Drainage

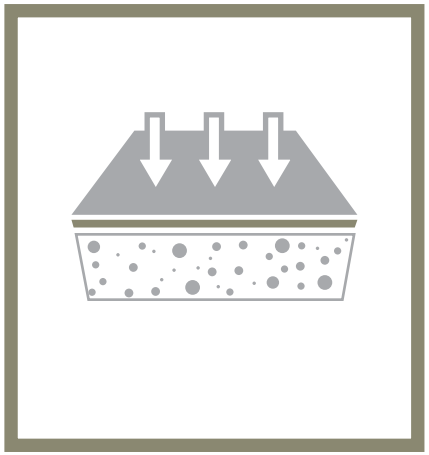
Drainage refers to the ability of typically thick non-woven geotextiles to provide an avenue for the flow of water through the plane of the geotextiles. NASK Geotextile acts as a passage, trapping soil particles and preventing clogging while letting fluids and gases move freely along its plane.



Filtration

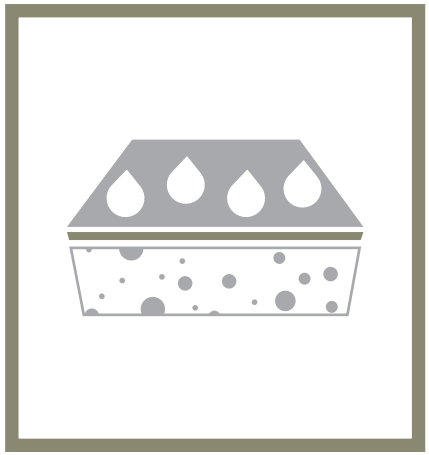
Filtration is defined as the equilibrium of a geotextile-soil system that allows for adequate liquid flow with limited soil loss across the plane of the geotextile. NASK Geotextile Filtration fabrics enable the passage of fluid through the covered layer, while preventing fine soil particles from moving with the water flow.

FUNCTIONS OF NASK GEOTEXTILES



Protection

NASK Geotextile, if used in landfills, ponds, tunnels, or any other containment facility extends the life of the lining system/Geomembrane by protecting it from punctures and excessive deformation. The NASK Geotextile acts as a cushioning and stress - relieving layer, minimizing the chances of leakage in the long term.



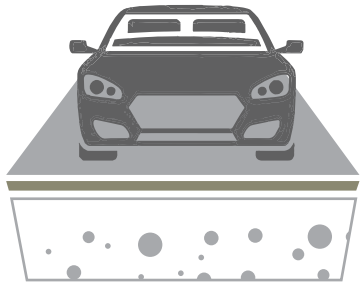
Moisture Barrier

Though relatively impermeable, NASK Geotextiles fabrics have a high load-bearing capacity, and a rougher surface hence is best suited for Reinforcement and strengthening of the pavement or road layers.

Reinforcement

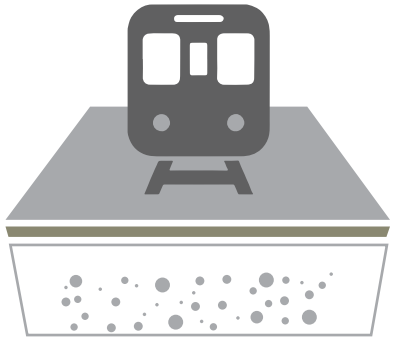
The geotextile fabric acts as a separator, preventing the mixing of different layers of soil or other materials. This helps to maintain the integrity of each layer and prevent intermixing, which can weaken the overall structure. It provides tensile strength to the soil or other materials which helps to resist deformation and maintain the structural integrity of the material, such as in Road Construction where heavy loads and traffic can cause significant deformation if the underlying soil is not properly reinforced. It also helps to prevent erosion and maintain stability in areas where water flow is a concern thus allowing for steeper embankments and roads to be built over very weak soil.

APPLICATION OF NASK GEOTEXTILES

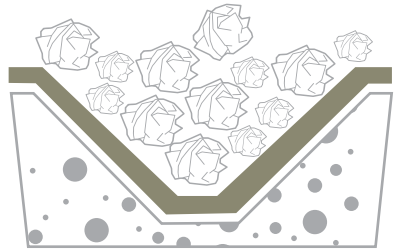


Roads and Highways

Airports

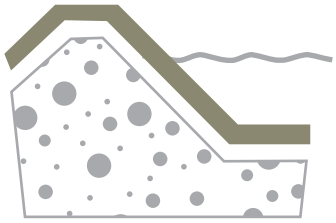


Railways

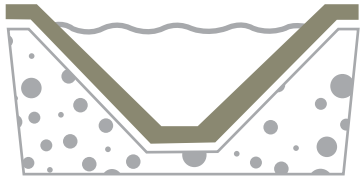


Waste Containment

Roofing



Coasts and Riverbanks



Reservoirs and Dams

Road Stabilization

Road stabilization is one of the most common applications of NASK geotextiles. In this application, the fabric is used to improve the structural integrity of roads and prevent damage caused by traffic, weather, and other factors. NASK Geotextile performs this function when impregnated with asphalt or other polymeric mixes rendering it relatively impermeable to both cross-plane and in-plane flow.

Non-woven geotextile offers excellent separation, reinforcement, and drainage properties, and has several benefits such as improved durability, stability, and performance, preventing soil erosion reducing maintenance costs, and extending the lifespan of the road. Geotextile can also improve the drainage capacity of the road, reduce soil settlement, and prevent the formation of potholes and cracks. All these properties make it ideal for road construction.

Paved Roads and Runways

The classic application of a geotextile as a liquid barrier is paved road rehabilitation, Here the non-woven geotextile is placed on the existing pavement surface following the application of an asphalt. The geotextile absorbs asphalt to become a waterproofing membrane minimizing the vertical flow of water into the pavement structure. Geotextiles are used in paved roads and runways to provide reinforcement, separation, drainage, and filtration. It helps to control the development of common pavement distress features such as rutting and cracking which can compromise the safety and durability of the runway and helps to distribute loads evenly.

This is accomplished by structural reinforcement of the base aggregate layer, controlling infiltration into moisture-susceptible layers, and preventing contamination of structural layers by the migration of fines from underlying soils. These functions help preserve and, in some cases, enhance the structural integrity of the constructed pavement layers.

Railroad Stabilization

Geotextile in this application helps to improve the stability and durability of the track bed, reducing maintenance costs and improving safety. And, in the role of separation it is placed between the subgrade and the ballast layer, to distribute loads evenly, reducing the risk of settlement and track deformation. This helps to prevent the mixing of materials and provides reinforcement to the ballast layer as well as to restrain the foundation and foundation material against lateral movements and from wandering off sideways due to shocks and vibrations from running trains.

Drainage System

In drainage, the geotextiles act as a horizontal drainage channel for liquids or gases. For underdrains constructed along pavements, the gravel-filled trenches lined with geotextiles allow water to drain into the trenches and separate or restrict soil materials, thereby preventing blockages that can reduce the flow of water and increase the risk of flooding and preventing damage to road structure and prolonging life of structure. For drainage, non-woven geotextiles are the preferred choice due to the small pore size and high flow capacity.

Geotextiles perform the filtering mechanism for drainage in the earth dams, in roads and highways, in reservoirs, behind retaining walls, in deep drainage trenches, and in agriculture. The fabric is placed between the soil and the retaining wall or slope surface, allowing water to flow through it while preventing soil particles from passing through. Drainage system applications of nonwoven geotextile fabric are critical for improving the efficiency and safety of infrastructure projects.

Erosion Control

Geotextiles are used to protect underlying soils and structures from damage caused by erosion, abrasion, or other environmental factors.

These fabrics are highly effective at stabilizing soils and preventing erosion caused by water flow, wind, or rainfall. They can be used to reinforce slopes and embankments, prevent soil erosion along highways and roadsides, and protect shorelines from wave action. They are highly permeable, which allows water to flow through them while still providing effective soil stabilization in construction sites and preventing sediment runoff into nearby waterways.

River, Canals and Coastal Protection

Geotextiles protect riverbanks from erosion due to currents or lapping. When used in conjunction with natural or artificial enrockments, they act as a filter. Protection of the coast against erosion is of paramount importance in coastland management. Waves, littoral drift, storm surges, and sea-level rise coupled with human activities near-shore such as dredging are the main causes of coastal erosion.

Geotextiles used on the coast are considered as a separating material in the foundation of breakwaters and coastal soils, they act as a filter to control the corrosion of wall and floor structures. Geotextiles used on artificial concrete beaches or breakwaters protect substrate under reinforced concrete from erosion due to the intensity of water waves.

Retaining Wall Structures

One of the common uses of geotextiles is to provide drainage behind retaining walls, which are structures that support soil or other materials at different levels. Retaining wall drainage is essential to prevent hydrostatic pressure, seepage, and instability of the wall and the soil behind it. Geotextiles can also provide multiple benefits for retaining wall drainage, such as filtering out fine particles, reducing clogging, increasing flow capacity, and improving soil strength.

When arranging foundations, geotextiles are used to separate fine-grained soil and gravel filling to prevent the mixing of layers, and at the same time capillary wetting of walls. The material can simultaneously perform two functions: to separate layers and provide effective drainage, preventing prolonged contact of the surface of the concrete base with moisture Source.

Agriculture

Non-woven geotextile fabrics are also widely used in agriculture applications. They are used to improve soil stability, prevent soil erosion, and enhance crop yields. Non-woven geotextile fabrics are essential in agriculture applications as they provide support, protection, filtration, erosion control, weed control, and moisture retention. They are widely used in agriculture to enhance crop yields and ensure sustainable farming practices.

The following are some of the ways non-woven geotextile fabrics are used in agriculture:

1. Soil Stabilization

Non-woven geotextile fabrics are used to stabilize the soil in agricultural fields. The fabric is placed on the soil surface or in trenches to prevent soil movement and collapse during excavation and planting.

2. Weed Control

Non-woven geotextile fabrics are used as a weed control layer in agricultural fields. The fabric is placed on the soil surface to prevent weeds from growing through it and competing with crops for nutrients and water.

3. Protection Layer

Non-woven geotextile fabrics are used as a protection layer for crops. The fabric is placed over the crops to protect them from damage caused by wind, rain, and pests.

4. Filtration Layer

Non-woven geotextile fabrics are used as a filtration layer in agricultural drainage systems. The fabric is placed between the soil and the drainage system to prevent soil particles from entering the system and clogging it.

5. Erosion Control

Non-woven geotextile fabrics are used as an erosion control layer in agricultural fields. The fabric is placed on slopes to prevent soil erosion caused by water runoff.

6. Moisture Retention

Non-woven geotextile fabrics are used to retain moisture in agricultural fields. The fabric is placed on the soil surface to prevent water from evaporating too quickly, which helps to maintain soil moisture levels and enhance crop yields.

Pond, and Reservoir Lining

Pond, and reservoir lining applications of non-woven geotextile fabric involve the use of the fabric to provide support, protection, and filtration to the lining materials used in these water management systems to ensure the proper functioning and longevity of the lining materials and the system.

The following are some of the ways non-woven geotextile fabrics are used in these applications:

1. Soil Stabilization

Non-woven geotextile fabrics are used to stabilize the soil around the canal, pond, or reservoir excavation site. The fabric is placed on the soil surface or in trenches to prevent erosion, soil movement, and collapse during excavation.

2. Separation Layer

Non-woven geotextile fabrics are used as a separation layer between the lining material and the soil. This layer prevents the soil from infiltrating the lining material and causing damage to it.

3. Protection Layer

Non-woven geotextile fabrics are used as a protection layer for the lining material. The fabric is placed between the lining material and the surrounding soil to protect the lining from damage caused by sharp objects, such as rocks or debris.

4. Filtration Layer

Non-woven geotextile fabrics are used as a filtration layer in canal, pond, and reservoir applications to prevent soil particles from entering the drainage system and clogging it. This helps to maintain proper water flow and prevent damage to the lining material.

5. Drainage Layer

Non-woven geotextile fabrics are used as a drainage layer in canal, pond, and reservoir applications to allow excess water to drain away from the water management system. This helps to prevent water damage and ensure the proper functioning of the system.

Tunnels

Non-woven geotextile fabrics are commonly used in tunnel applications to provide support and protection to the surrounding soil and rock to ensure the proper functioning and longevity of the tunnel system.

The following are some of the ways non-woven geotextile fabrics are used in tunnel applications:

1. Soil Stabilization

Non-woven geotextile fabrics are used to stabilize the soil around the tunnel excavation site. The fabric is placed on the soil surface or in trenches to prevent erosion, soil movement, and collapse during excavation.

2. Drainage Layer

Non-woven geotextile fabrics are used as a drainage layer in tunnel construction to allow excess water to drain away from the tunnel. This helps to prevent water damage and ensure the proper functioning of the tunnel.

3. Separation Layer

Non-woven geotextile fabrics are used as a separation layer between the tunnel lining and the surrounding soil. This layer prevents the soil from infiltrating the tunnel and causing damage to the lining.

4. Protection Layer

Non-woven geotextile fabrics are used as a protection layer for the tunnel lining. The fabric is placed between the lining and the surrounding soil to protect the lining from damage caused by sharp objects, such as rocks or debris.

5. Filtration Layer

Non-woven geotextile fabrics are used as a filtration layer in tunnel applications to prevent soil particles from entering the drainage system and clogging it.

Waste Containment

Non-woven geotextile fabrics are widely used in waste containment applications due to their superior strength, durability, and permeability properties. Waste containment refers to the process of safely storing or disposing of hazardous or non-hazardous waste materials to prevent environmental contamination and harm to human health.

The following are some of the ways non-woven geotextile fabrics are used in waste containment:

1. Landfills

Non-woven geotextile fabrics are used as liners in landfills to prevent leachate from contaminating the surrounding soil and groundwater. Leachate is a liquid that forms when water percolates through waste materials and picks up contaminants. The non-woven geotextile fabric acts as a barrier to prevent leachate from penetrating the soil and groundwater.

2. Waste Ponds

Non-woven geotextile fabrics are used to line waste ponds to prevent the seepage of contaminants into the soil and groundwater. Waste ponds are used to store liquid waste materials such as sewage, industrial effluent, and agricultural runoff.

3. Hazardous Waste Sites

Non-woven geotextile fabrics are used as barriers in hazardous waste sites to prevent the spread of contaminants. Hazardous waste sites are areas where hazardous waste materials have been dumped or spilled, and they pose a significant threat to human health and the environment.

4. Containment Berms

non-woven geotextile fabrics are used to create containment berms around waste storage areas to prevent spills and leaks from spreading. Containment berms are raised barriers that surround a storage area, and they are designed to contain any spills or leaks that may occur.

Roofing

Non-woven geotextile fabrics are also used in roofing applications to provide a protective layer between the roofing membrane and the underlying substrate to ensure the proper functioning and longevity of the roofing system.

The following are some of the ways non-woven geotextile fabrics are used in roofing applications:

1. Protection Layer

Non-woven geotextile fabrics are used as a protection layer between the roofing membrane and the underlying substrate. This layer protects the roofing membrane from damage caused by sharp objects, such as stones or debris, and prevents moisture from penetrating the roofing system.

2. Drainage Layer

Non-woven geotextile fabrics are used as a drainage layer in green roofs and other roof gardens. This layer allows excess water to drain away from the roof, preventing water damage and ensuring proper plant growth.

3. Separation Layer

Non-woven geotextile fabrics are used as a separation layer between the roofing membrane and the insulation layer. This layer prevents the insulation from sticking to the roofing membrane and allows for proper ventilation.

4. Wind Uplift Protection

Non-woven geotextile fabrics are used as a wind uplift protection layer in low-slope roofing systems. This layer helps to prevent wind uplift by providing a strong and durable barrier that holds the roofing system in place.

NASK GEOTEXTILE SPECIALITIES

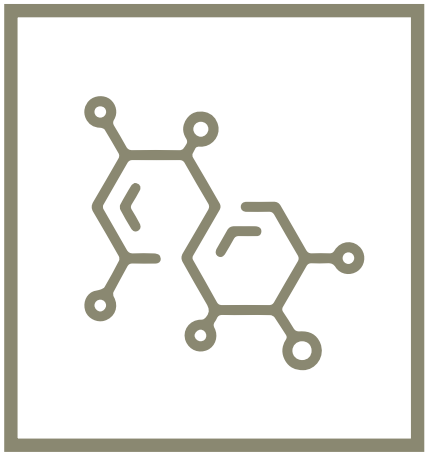
State of the art European production line

Dedicated qualified and experienced professionals to fulfill the needs of our valued customers

A maximum production capacity of 8,000 tones/annum

We offer thermal bonded and needlepunched geotextile products

Wide range of products from 70 to 1200 GSM



Geo-textiles products available in polypropylene and polyester

In-house testing laboratory

Our machines

NASK Geotextile Industries nonwovens are produced on State-of-the-art European production line - AUTEFA SOLUTIONS , ITALY.

1. Bale Opener & Blending Box

2. Card

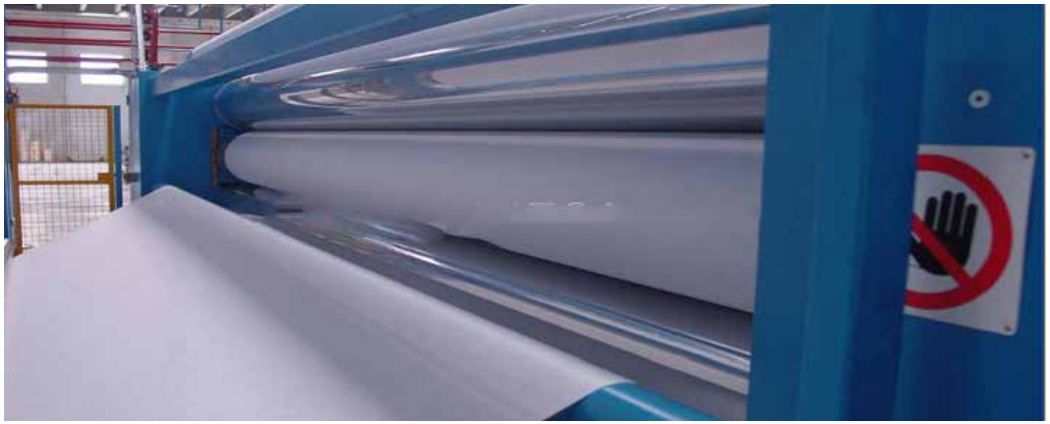
3. Crosslapper

4. Web Drafter

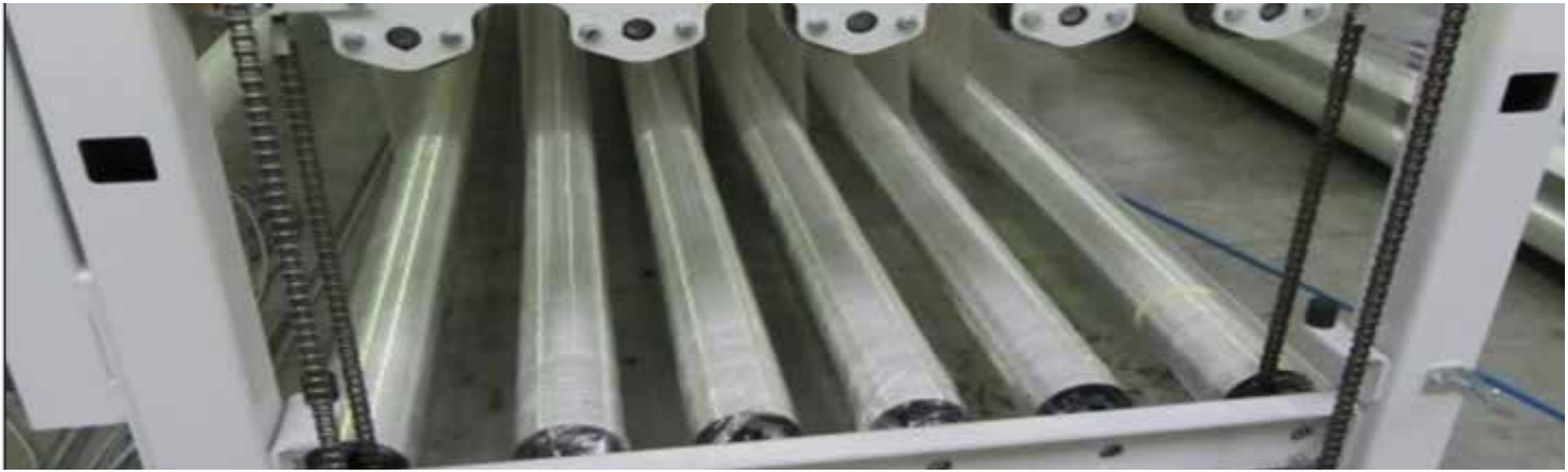
5. GSM Scanner

6. Needle punching

7. Calender



8. Accumulator



9. Winder

PRODUCT RANGE

NASK Standard Geotextile products indicated in this data sheet, a variety of grades between 70 g/m² and 1200 g/m² available in polypropylene and polyester and Thermal bonded as well as Needle Punched.

MECHANICAL PROPERTIES

HIGH TENACITY,100% VIRGIN POLYPROPYLENE NEEDLE PUNCHED, THERMALLY BONDED NONWOVEN GEOTEXTILE **NASK GEO-02/2024/APR**

Name	Test Method	Units	Tolerance	80	100	125	140	200	250	300	350	400	450	500	600	700	800	1000	1200
Tensile Strength - MD	EN ISO 10319	KN/m	± 10%	5.0	7.0	9.0	10.0	14.0	18.0	21.0	25.0	28.0	32.0	35.0	42.0	48.0	56.0	70.0	84.0
Tensile Strength - CD	EN ISO 10319	KN/m	± 10 %	6.0	8.0	11.0	12.0	17.0	21.0	24.0	28.0	30.0	36.0	40.0	46.0	56.0	60.0	76.0	90.00
Tensile Elongation - (MD/ CD)	EN ISO 10319	%	± 25 %	50/60	50/60	50/60	50/60	60/65	60/65	60/65	60/65	60/65	60/65	60/65	60/65	60/65	65/65	65/65	65/70
CBR Puncture Resistance	EN ISO 12236	KN	± 15 %	0.850	1.200	1.500	1.600	2.400	2.900	3.300	3.800	4.300	4.800	5.300	5.800	6.300	6.800	8.800	10.800
Grab Strength - (MD/CD)	ASTMD 4632	KN	± 25 %	0.280	03.50	0.450	0.540	0.770	1.000	1.200	1.300	1.400	1.500	1.600	1.800	2.000	2.200	2.600	3.000
Grab Elongation - (MD/ CD)	ASTMD 4632	%	± 25 %	50/60	50/60	50/60	60/65	60/65	60/65	60/65	60/65	60/65	60/65	60/65	60/65	60/65	65/65	65/65	65/70
Tear Strength	ASTMD 4533	N	± 15 %	110	140	180	210	300	360	380	450	500	550	600	700	800	900	1100	1200
Index Puncture	ASTMD 4833	N	± 15 %	-	-	-	-	-	-	300	350	385	550	617	740	860	960	1200	1400
Cone Drop Test	EN ISO 13433	mm	± 15 %	40	35	30	26	18	14	12	11	10	8	6	4	2	2	0	0

HYDRAULIC PROPERTIES

Name	Standard	Units	Tolerance	80	100	125	140	200	250	300	350	400	450	500	600	700	800	1000	1200
Permeability	EN ISO 11058	Lt/m²/ sec	± 30 %	100	85	75	65	45	40	35	30	25	20	18	16	14	12	6	4
Opening Size	EN ISO 12956	µm	± 30 %	110	100	95	90	80	75	70	70	70	70	70	60	60	60	50	50

PHYSICAL PROPERTIES

Name	Standard	Units	Tolerance	80	100	125	140	200	250	300	350	400	450	500	600	700	800	1000	1200
Thickness @ 2kPa	EN ISO 9863-1	mm	± 20 %	0.5	0.6	0.7	0.8	1.2	1.5	1.8	2.0	2.3	2.4	2.5	2.7	2.8	2.9	3.0	3.2
Weight	EN ISO 9864	g/m²	± 10 %	80	100	125	140	200	250	300	350	400	450	500	600	700	800	1000	1200
Roll Width	-	MTR	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Roll Length	-	MTR	-	100	100	100	100	100	100	100	50	50	50	50	40	40	35	35	30
Roll Weight	-	Kg	-	40	50	62.5	70	100	125	150	87.5	100	112.5	125	120	140	140	175	180

DURABILITY TEST

Name	Standard	Value
UV Resistance	ASTMD 4355	70%
Chemical Resistance	EN ISO 12960	100%

PRODUCT DESCRIPTION

Name	Standard	Name	Standard
Polymer	100 % PP	Melting Point	165 ° C
Density	0.91 gm/cc	Fiber Bonding	THERMAL

MECHANICAL PROPERTIES

HIGH TENACITY, 100% VIRGIN POLYPROPYLENE NEEDLE PUNCHED NONWOVEN GEOTEXTILE | **NASK GEO-02/2024/APR**

Name	Test Method	Units	Tolerance	90	100	120	140	200	220	250	300	350	400	500	600	700	800	900	1000	1200
Tensile Strength - MD	EN ISO 10319	KN/m	± 10%	5.0	5.7	6.8	8.0	11.4	14.0	15.0	18.0	21.0	24.0	30.0	36.0	42.0	48.0	54.0	60.0	70.0
Tensile Strength - CD	EN ISO 10319	KN/m	± 10 %	5.6	6.8	8.2	9.5	13.7	15.0	18.0	21.5	25.0	28.8	36.0	43.0	48.0	54.0	60.0	68.0	80.0
Tensile Elongation - (MD/CD)	EN ISO 10319	%	± 25 %	50/60	50/60	50/60	50/60	50/60	60/60	60/60	60/60	60/60	60/60	60/65	60/65	70/70	70/70	70/70	70/70	70/70
CBR Puncture Resistance	EN ISO 12236	KN	± 15 %	0.950	1.050	1.280	1.500	2.140	2.350	2.650	3.200	3.750	4.250	5.350	6.400	7.500	8.500	9.600	10.700	12.800
Grab Strength - (MD/CD)	ASTMD 4632	KN	± 25 %	0.330	0.370	0.450	0.520	0.820	0.930	1.060	1.250	1.480	1.600	2.000	2.400	2.800	3.200	3.400	3.600	3.800
Grab Elongation - (MD/CD)	ASTMD 4632	%	± 25 %	50/60	50/60	50/60	50/60	50/60	60/60	60/60	60/60	60/60	60/60	60/65	60/65	70/75	70/75	70/75	70/75	70/75
Tear Strength	ASTMD 4533	N	± 15 %	170	190	210	240	340	360	400	450	500	550	650	780	910	1050	1200	1300	1560
Index Puncture	ASTMD 4833	N	± 15 %	190	220	270	320	500	580	650	750	840	900	1000	1075	1200	1320	1450	1600	1860
Cone Drop Test	EN ISO 13433	mm	± 15 %	34	32	30	25	20	18	16	14	12	10	7	6	4	2	0	0	0

HYDRAULIC PROPERTIES

Name	Standard	Units	Tolerance	90	100	120	140	200	220	250	300	350	400	500	600	700	800	900	1000	1200
Permeability	EN ISO 11058	Lt/m²/sec	± 30 %	130	125	120	110	90	85	80	70	65	60	50	45	40	35	30	25	20
Opening Size	EN ISO 12956	µm	± 30 %	120	110	110	100	100	95	95	90	90	80	70	70	70	60	60	60	60

PHYSICAL PROPERTIES

Name	Standard	Units	Tolerance	90	100	120	140	200	220	250	300	350	400	500	600	700	800	900	1000	1200
Thickness @ 2kPa	EN ISO 9863-1	mm	± 20 %	1.0	1.1	1.3	1.5	2.0	2.1	2.2	2.4	2.6	3.0	3.5	4.5	4.8	5.2	5.8	6.0	7.0
Weight	EN ISO 9864	g/m²	± 10 %	90	100	120	140	200	220	250	300	350	400	500	600	700	800	900	1000	1200
Roll Width	-	MTR	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Roll Length	-	MTR	-	100	100	100	100	100	100	100	100	50	50	50	40	40	35	35	35	30
Roll Weight	-	Kg	-	45	50	60	70	100	110	125	150	87.5	100	125	120	140	140	157.5	175	180

DURABILITY TEST

Name	Standard	Value
UV Resistance	ASTMD 4355	70%
Chemical Resistance	EN ISO 12960	100%

PRODUCT DESCRIPTION

Name	Standard	Name	Standard
Polymer	100 % PP	Melting Point	165 ° C
Density	0.91 gm/cc	Fiber Bonding	MECHANICAL

MECHANICAL PROPERTIES

HIGH TENACITY, 100% VIRGIN POLYESTER NEEDLE PUNCHED NONWOVEN GEOTEXTILE | **NASK GEO-02/2024/APR**

Name	Test Method	Units	Tolerance	90	100	120	140	150	200	250	300	350	400	500	600	700	800	900	1000	1200
Tensile Strength - MD	EN ISO 10319	KN/m	± 10%	3.0	3.4	4.2	5.0	5.4	7.1	8.8	12.0	14.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0	48.0
Tensile Strength - CD	EN ISO 10319	KN/m	± 10%	3.6	4.0	5.0	6.0	6.4	8.5	10.6	14.4	16.8	19.2	24.0	28.8	33.6	38.4	43.2	48.0	58.0
Tensile Elongation- (MD/CD)	EN ISO 10319	%	± 25%	50/60	50/60	50/60	50/60	50/60	50/60	50/60	60/65	60/65	60/65	60/65	60/65	60/65	60/65	60/65	60/65	60/70
CBR Puncture Resistance	EN ISO 12236	KN	±15%	0.735	0.800	0.980	1.150	1.250	1.650	2.045	2.455	2.850	3.250	4.050	4.860	5.670	6.480	7.300	8.100	9.700
Grab Strength- (MD/CD)	ASTMD 4632	KN	± 25%	0.200	0.220	0.270	0.300	0.320	0.450	0.550	0.700	0.820	0.850	1.150	1.300	1.500	1.700	1.900	2.100	2.300
Grab Elongation- (MD/CD)	ASTMD 4632	%	± 25%	50/60	50/60	50/60	50/60	50/60	50/60	50/60	60/65	60/65	60/65	60/65	60/65	60/65	60/65	60/65	60/65	60/70
Tear Strength- (MD/CD)	ASTMD 4533	N	± 15%	90	100	120	140	150	200	250	280	330	380	480	580	680	760	860	960	1160
Index Puncture	ASTMD 4833	N	± 15%	160	180	220	260	320	420	500	600	700	800	900	1000	1100	1200	1300	1400	1600
Cone Drop Test	EN ISO 13433	mm	± 15%	35	34	30	28	26	24	22	18	14	10	8	6	4	2	1	1	0

HYDRAULIC PROPERTIES

Name	Standard	Units	Tolerance	90	100	120	140	150	200	250	300	350	400	500	600	700	800	900	1000	1200
Permeability	EN ISO 11058	Lt/m²/sec	± 30%	100	95	90	90	85	80	75	65	60	55	50	40	35	30	28	26	20
Opening Size	EN ISO 12956	µm	± 30%	120	110	110	110	100	90	90	90	80	80	80	80	70	70	70	70	65

PHYSICAL PROPERTIES

Name	Standard	Units	Tolerance	90	100	120	140	150	200	250	300	350	400	500	600	700	800	900	1000	1200
Thickness @ 2kPa	EN ISO 9863-1	mm	± 20%	1.1	1.2	1.4	1.6	1.6	2.2	2.5	3.0	3.5	3.8	4.0	4.4	4.8	5.2	5.6	6.0	7.0
Weight	EN ISO 9864	g/m²	± 10%	90	100	120	140	150	200	250	300	350	400	500	600	700	800	900	1000	1200
Roll Width	-	MTR	_	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Roll Length	-	MTR	_	100	100	100	100	100	100	100	100	50	50	50	40	40	35	35	35	30
Roll Weight	-	Kg	_	45	50	60	70	75	100	125	150	87.5	100	125	120	140	140	157.5	175	180

DURABILITY TEST

Name	Standard	Value
UV Resistance	ASTMD 4355	70%
Chemical Resistance	EN ISO 12960	100%

PRODUCT DESCRIPTION

Name	Standard	Name	Standard
Polymer	100 % PET	Melting Point	250 ° C
Density	1.39 gm/cc	Fiber Bonding	MECHANICAL

MECHANICAL PROPERTIES

HIGH TENACITY 100% VIRGIN POLYESTER NEEDLE PUNCHED,THERMALLY BONDED NONWOVEN GEOTEXTILE | **NASK GEO-02/2024/APR**

Name	Test Method	Units	Tolerance	80	100	125	140	200	250	300	350	400	450	500	600	700	800	1000	1200
Tensile Strength - MD	EN ISO 10319	KN/m	± 10%	4.0	5.0	6.0	7.0	10.0	13.0	16.0	18.0	21.0	23.0	26.0	31.0	36.0	42.0	52.0	62.0
Tensile Strength - CD	EN ISO 10319	KN/m	± 10 %	5.0	6.0	7.0	8.0	12.0	16.0	20.0	22.0	25.0	28.0	31.0	37.0	44.0	50.0	62.0	75.0
Tensile Elongation - (MD/CD)	EN ISO 10319	%	± 25 %	50/60	50/60	50/60	50/60	60/65	60/65	60/65	60/65	60/65	60/65	60/65	65/65	65/65	65/65	65/65	65/70
CBR Puncture Resistance	EN ISO 12236	KN	± 15 %	0.800	1.100	1.300	1.600	2.200	2.600	3.300	3.600	4.100	4.500	5.200	6.200	7.200	8.200	10.20	12.20
Grab Strength - (MD/CD)	ASTMD 4632	KN	± 25 %	0.220	0.250	0.280	0.320	0.480	0.600	0.750	0.850	0.900	1.100	1.200	1.440	1.650	1.900	2.400	2.800
Grab Elongation - (MD/CD)	ASTMD 4632	%	± 25 %	40/45	40/45	45/50	50/50	50/50	50/50	50/50	50/50	50/55	50/55	50/55	55/60	55/60	55/60	60/60	60/60
Tear Strength	ASTMD 4533	N	± 15 %	60	80	100	120	160	200	240	280	320	360	400	480	560	640	800	960
Index Puncture	ASTMD 4833	N	± 15 %	-	-	-	-	-	-	250	300	350	400	450	540	630	720	900	1050
Cone Drop Test	EN ISO 13433	mm	± 15 %	30	28	26	22	18	16	12	8	6	5	4	3	2	0	0	0

HYDRAULIC PROPERTIES

Name	Standard	Units	Tolerance	80	100	125	140	200	250	300	350	400	450	500	600	700	800	1000	1200
Permeability	EN ISO 11058	Lt/m²/sec	± 30 %	85	75	70	65	55	45	35	30	25	20	15	14	12	10	4	2
Opening Size	EN ISO 12956	µm	± 30 %	90	85	75	70	65	60	60	60	60	60	60	60	55	50	45	40

PHYSICAL PROPERTIES

Name	Standard	Units	Tolerance	80	100	125	140	200	250	300	350	400	450	500	600	700	800	1000	1200
Thickness @ 2kPa	EN ISO 9863-1	mm	± 20 %	0.6	0.8	0.9	1.0	1.3	1.6	1.7	1.8	1.9	2.0	2.1	2.3	2.5	2.7	3.1	3.2
Weight	EN ISO 9864	g/m²	± 10 %	80	100	125	140	200	250	300	350	400	450	500	600	700	800	1000	1200
Roll Width	-	MTR	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Roll Length	-	MTR	-	100	100	100	100	100	100	100	50	50	50	50	40	40	35	35	30
Roll Weight	-	Kg	-	40	50	62.5	70	100	125	150	87.5	100	112.5	125	120	140	140	175	180

DURABILITY TEST

Name	Standard	Value
UV Resistance	ASTMD 4355	70%
Chemical Resistance	EN ISO 12960	100%

PRODUCT DESCRIPTION

Name	Standard	Name	Standard
Polymer	100 % PET	Melting Point	250 ° C
Density	1.39 gm/cc	Fiber Bonding	THERMAL

ناسك لصناعة الجيوتكستايل ذ.م.م

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