

TECHGEO

nonwoven geotextiles

PP Staple Fiber Nonwoven Needle Punched Geotextile



TECHFAB INDIA

At the heart of geosynthetic activity

TechGeo NonWoven Geotextile

The use of geotextiles in civil engineering applications has grown up substantially since their first usage in 1960, Geotextile are now widely applied in most of the Civil Engineering applications. The most commonly used Nonwoven Geotextile are Needle Punched due to their proven track record and versatility.

TechGeo nonwoven needle-punched geotextile manufactured by TechFab India Industries is produced from specially engineered UV stabilized 100% Polypropylene fibre Poly Propylene yarn to form stable network of Staple fibers in order to ensure desired engineering properties in the fabric.

The characteristics of a Nonwoven Geotextile are determined by type of raw material, structure of fiber matrix and bonding method. There are three types of bonding mechanisms for manufacturing of Nonwoven Geotextile , Mechanical Bonding or Needle Punching in which randomly oriented short staple fibers or continuous filament layers (fleece) are bonded together through process of Needling; In Thermal bonding the short fibers are bonded together through Heating Process, In Chemical bonding the fibers are bonded together through chemical coating.

TechGeo nonwovens are produced from state of art fully automatic German Dilo plant from the UV stabilized Crimped staple fiber produced from 100% virgin PP.



Fig 1 : (a) Staple Fiber Plant (b) Nonwoven Manufacturing line from Dilo Germany

TechGeo Nonwoven Geotextile are manufactured through process of Needle-punching that involves forcibly entangling layers of loose staple fibres into three dimensional structure (fig 1b) by sequentially punching and pulling out barbed needles through the fiber matrix. TechGeo Nonwovens are produced with UV stabilized select Crimped staple fibers and firm interlocking bond ensured through German Dilo machine exhibit high abrasion and CBR puncture resistance.

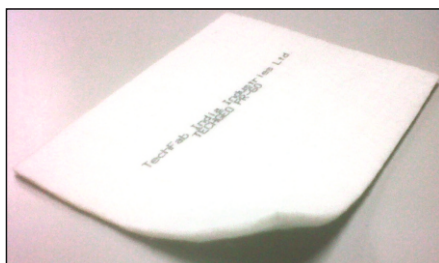


Fig: 1 a – TechGeo Nonwoven

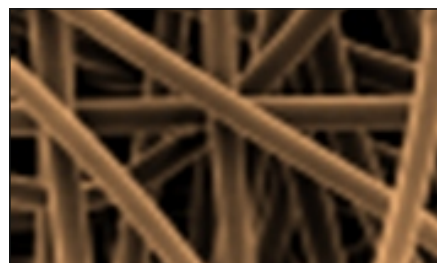


Fig:1b-Magnified View of Needle-punched Nonwoven

TechGeo Needle-punched nonwovens have higher elongation due to the flexible and non-brittle fibre junctions. Due to their superior elongation behavior TechGeo nonwovens can accommodate soil irregularities in better way and are more resistant to puncture and can absorb more impact energy. The compact and randomly oriented fiber matrix provide excellent filtration characteristics and hydraulic properties in TechGeo Nonwovens.



TechGeo NonWovens : An Overview

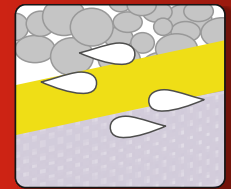
- ▮ Made of 100% PP stable fiber
- ▮ High UV and Abrasion Resistance
- ▮ Stable in pH range of 2 - 13 and resistant to biological degradation
- ▮ Available in 'N' AND 'H' series from 120 to 1200 GSM
- ▮ Upto tensile strength of 75Kn/m
- ▮ 'N' Range excellent filtration behavior, 'H' range thick and robust for Protection and Separation applications
- ▮ Excellent clogging resistance

How to select right TechGeo Grade?

Applications	Area / Sectors	TechGeo Functions	Key Properties
	Highway & Railways	Separation Filtration Reinforcement Drainage	Tensile Strength, Elongation CBR Puncture, Impact Energy Pore Size, Permeability
	River Bank & Coastal Protection	Filtration, Erosion Control	Pore Size, Permeability, UV Resistance, Abrasion Resistance, CBR Puncture, Impact Energy
	Waste Landfills & Ash Dikes	Protection, Filtration, Drainage	Mass, CBR Puncture, Tensile, UV Resistance, pH Stability, Chemical Resistance, AOS, Flow Rate, Permeability, Elongation, Cone Drop
	Tunnels & Waterproofing	Protection, Drainage	Mass, CBR Puncture, Tensile, UV Resistance, AOS, Flow Rate, Permeability, Cone Drop
	Hydro Projects, Dams & Reservoirs	Filtration, Protection Drainage	AOS, Flow Rate, Permeability, CBR Puncture, Tensile
	Canals	Drainage Filtration	Pore Size, Permeability, Flow Rate, Elongation, Tensile Strength
	Pavement Rehabilitation	Sealing	Polymer Melting Point, Asphalt Absorption, Tensile Strength, Tear Strength
	Architecture & Landscaping	Filtration	AOS, Flow Rate, Permeability

TechGeo Engineering Functions

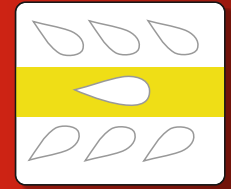
Filtration



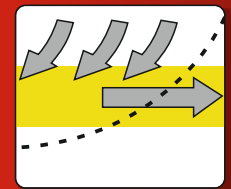
Separation



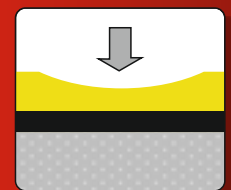
Drainage



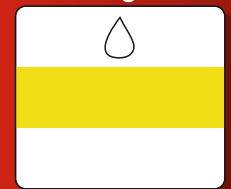
Reinforcement



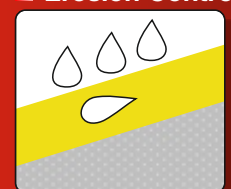
Protection



Sealing



Erosion Control



Polypropylene Staple Fiber Production

TechFab India also manufactures Polypropylene Staple Fiber (PPSF). PPSF has wide ranging applications in view of its being a light weight fiber with high insulation properties UV Stabilization and Resistance to Abrasion.

PPSF branded as TechFibre is manufactured with the state of art technology from FLIESSNER Germany with rated capacity of 600 kg/hr. TechFibre is available in natural and black colour. TechFibre is ideal for use in manufacturing of wide range & grades of **TechGeo Nonwoven Fabrics**.

PPSF has following unique properties :

- Lowest specific gravity of 0.91 (provides excellent covering).
- Negligible moisture absorption (0.05%).
- Fabric containing PPSF wicks away moisture from skin to atmosphere due to capillary action.
- PPSF is resistant to many acids, alkalies and solvents.
- PPSF is resistant to attack of mildew/ moths/ insects and a wide range of bacteria.
- Not prone to static charge generation.
- Not subject to light degradation, if UV Stabilized.
- Highly resilient fibre.



PP STAPLE FIBRE



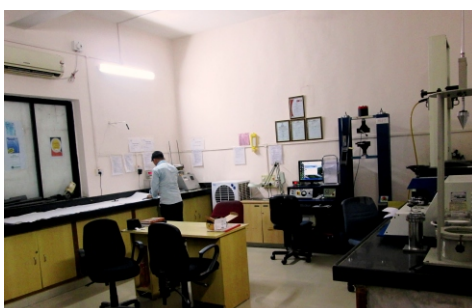
UV TESTING MACHINE



QC Laboratory at TechFab India:

TECHFAB INDIA'S QUALITY CONTROL LABORATORIES RECEIVE THE PRESTIGIOUS NABL ACCREDITATION (INDIA'S HIGHEST LABORATORY ACCREDITATION CERTIFICATE)

As India's leading manufacturer of Geosynthetics, TechFab India Industries Ltd., has always been committed to provide our esteemed customers the widest range of world-class geosynthetic products and associated services. One of our foremost concerns is to assure the quality and consistency of our products and we had taken a series of measures to ensure this objective. We have installed latest Testing Facilities for online testing and Quality Control of TechGeo Nonwoven. One of the Biggest Achievement is NABL Accreditation of our Laboratory at Daman.



NABL Accreditation

TechGeo Nonwoven Geotextile Product Range

TechGeo Product Application

o TechGeo Nonwoven Needle Punched Geotextile Fabric



- | TechGeo Nonwoven Needle Punched Geotextile Fabric
- | PN Series H-Grade (400-1200 GSM)
- | Applied as Filter, Separator, Reinforcement
- | 100% Polypropylene UV Stabilized
- | Alkali and Acid resistant
- | Tempering and UV Resistant PACKING
- | Up to 5.0m Width; WHITE and BLACK Colour



o TechGeo High Performance Abrasion Resistance Geobags & Geo-containers

- | 126 Kgs Pillow Type Geobags made of UV stabilized and Robust Nonwoven to withstand abrasive forces made up of 300,350 and 400 GSM Fabric.
- | Customized size Mega Geo Containers for Coastal and Aggressive river environment Made from 500-700 GSM Fabric.



o TechGeo Paving Fabric

- | TechGeo Co40 Paving Fabric is effective for control of Reflective cracking in Flexible Pavements as SAMI Layer.
- | Specifications in accordance with MORTH Rev-5 Guidelines under section 700.



Why TechGeo Nonwovens?

- | High UV and Abrasion Resistance
- | Available upto 5.0 m width
- | ISO 9001 Certified
- | Stat-of-art manufacturing plant having 4000 Tonne per annum capacity
- | Backward Integration to manufacturing High Quality PP Staple Fiber for producing NM Raw Material
- | Reliability and Trust of TechFab India Brand
- | Technical Support from qualified Technical people
- | Well proven in the field
- | Approved in several Government Departments
- | NABL Accredited Laboratory with all Testing of Nonwoven available under one roof
- | Complete QC Test facilities in a modern lab as per ISO and ASTM standards



Important Notice

The information contained in this brochure is general in nature and does not cover any particular site or soil conditions. This is only for guidance purposes. Users are advised to take into account the prevailing site conditions and data before specifying a particular product. For details about the TechGeo applications pl. contact us on our contact details

World-Class Geosynthetics Manufactured in India by TechFab India Industries Ltd.

TFI Woven Geotextiles			TechGrid Geogrids	TGC Reinforced Nonwoven Composites	TechDrain PVDs	Asphalt Pavement Reinforcing Technology	TechGeo Nonwoven Geotextile	TechTubes	Tech Geobags	TechFab Metal Gabion Double twist wire mesh products
Polypropylene Tape	Polypropylene Multifilament	Polyester Multifilament								



TECHFAB INDIA

At the heart of geosynthetic activity

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