We provide solutions to improve the life...

istanbulteknik
"Ready to improve your construction"

INDEX

İstanbul Teknik

Istanbul Teknik is a Turkish building materials and civil engineering company that was founded in 1998 serving to the construction industry.

Istanbul Teknik manufactures and sells products offering maximum benefit to construction industry with the most suitable solution for the projects employed.

Istanbul Teknik has a wide product range from infrastructure to estates and from asphalt applications to waterproofing. Istanbul Teknik comes forward with its high quality products and perfect services, experience and confidence.

Istanbul Teknik started up to 6.20 m width geogrid manufacturing in 2011 April with 4 million sqm/year capacity in its factory.

Products were presented to market with ForTex and AsfaltTex brand names.

Istanbul Teknik operates with manufacturing lines of the latest technology. Istanbul Teknik carries on R&D studies in its laboratory with skilled staff.

Istanbul Teknik exports to more than 50 countries in 5 continents including Europe, Africa, Austraila and Pacific Region, Asia (Middle East and CIS Countries) and America

Istanbul Teknik offers relevant solutions to its customers with over 20 engineers and architects, 80 employees and 1,000 selling points throughout Turkey.

Istanbul Teknik operates according to EN ISO 9001:2008 Quality Management Standards. Also Istanbul Teknik has CE certificate or DoP – Declaration of Performance commitment for all of its products.

Istanbul Teknik maintains its leading position in the market without concession from customer satisfaction with 'Ready to Improve Your Construction' motto.

Historical Background

In 1998 it was founded.
In 1999 made its first export.
In 2000, GeoSeal site applications were initiated.
In 2003, FileTex Plaster and Reinforcement Mesh sales were started.
In 2004, FileTex Naturalstone and Marble Protection Net sales were started.
In 2005, the first overseas site practice was held.
In 2005, GeoArme site applications began to be implemented.
In 2005, Geosynthetics engineering services were introduced.
In2005, Quality Manager position was created.
In 2006, ISO 9001 Quality Management System Certificate was taken.
In 2006, TrioTex Roofing and Facade Covering sales started.
In 2008 was started the sale of asphalt products.
In 2009, GeoSeal PVC tunnel insulation applications implementation began.
In2011, ForTex Geogrid production was started.
In 2011, R & D laboratory was established.
In 2011, Enterprise Resource Planning (ERP) system was initiated.
In 2011, TekFix Fixing Elements production was started.
In 2013 began the production of asphalt TeraGrip chemicals.
In 2013, the production of GeoGreen Green Roof Systems was started.
In 2014, the production of epoxy was started under EpoxIstt brand name.
In 2015, ForTex and AsfaltTex geogrid production has exceeded 6 million square meters in total.
In 2015, the production of PowerFix Brick Anchors was started.
In 2015, the production of CoverEx Expansion Joints was started.
In 2015 was started the sale of sound insulation systems.
In 2015, the number of regularly exported countries has exceeded 50 on 4 continents.

Areas of Activity

Geosynthetics

Geogrids, geotextiles, geomembranes, asphalt reinforcements, erosion control, retaining structure systems and coastal retaining structure systems included in the product range of Istanbul Teknik offers you unique engineering solutions that you need for your construction sites.

Insulation Products

Applying heat and water insulation provides reduction in energy costs and prolongs the service life of the structure. With acoustics, water and heat insulation products of Istanbul Teknik you also can extend the service life of your building, reduce your energy costs and improve the health and comfort standarts of your structure.

Expansion Joints

CoverEx Dilatation Systems from Istanbul Teknik are used in constructions of shopping malls, hospitals, car parks, industrial structures, plazas and other business centers; in pedestrian ways, light, heavy and industrial vehicle traffic ways; in floor, wall and seismic applications.

Concrete Reinforcing Fibers

FiberCon Fibers are usually used in concrete to control cracking due to plastic shrinkage and to drying shrinkage. They also reduce the permeability of concrete and thus reduce bleeding of water. FiberCon MLF & FF type fibers produce greater impact–, abrasion–, and shatter–resistance in concrete. Generally fibers do not increase the flexural strength of concrete, and so cannot replace moment–resisting or structural steel reinforcement. Macro Fibers are used on pavements, slab-on-ground and shotcrete applications.

Asphalt Additives

Istanbul Teknik offers engineering solutions unique to highways with the products and applications, developed house. Asphalt Additive Products included in the product range of Istanbul Teknik extend the life asphalt pavement and improve performance.

Sub-contracting works

Today, it is an incontestable fact that the lands possess extraordinary value. Another fact is that the design on paper is not always possible to be implemented. GeoArme brand of reinforced retaining wall system of Istanbul Teknik, by makes possible to achieve what couldn't be achieved before and allows fast implementation of the projects it takes place to have a robust, economic and aesthetic appearance.

Geosynthetics

The planar products, used with ground, rock, soil or other geotechnical engineering related material manufactured from polymeric materials as part of a structure or system, are called geosynthetic products.

ForTex Geogrids

These are high-strength materials that are developed for uniaxial and biaxial geogrid reinforcement requirements in civil engineering applications.

GeoTeknik PP Non-woven Geotextiles

GeoTeknik PP is white non-woven geotextile products produced by the method of mechanical needling of the polypropylene-based fibers and heat treatment implementation.

İzoTeknik Non-woven Geotextiles

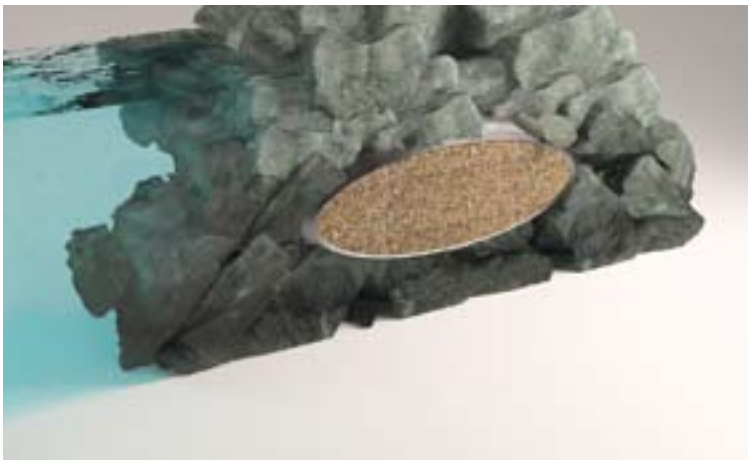
İzoTeknik PET is multi-colored non-woven geotextile products produced by the method of mechanical needling of the polypropylene-based fibers and heat treatment implementation.

GeoSeal Membranes

These are the membranes used in different tunnel waterproofing applications, landfill of solid wastes, mine waste landfills, wastewater treatment plants, irrigation canals and ponds.

GeoTorba PP Coastal Retaining Structural Member

GeoTorba PP Coastal Retaining Structural Member; these are special purpose oversized bags formed by sewing with high strength polypropylene fabric with high strength yarns for use for pipeline padding, coastal filtering and mechanical filtration purposes.



ForTex GT Woven Geotextiles

ForTex GT is woven geotextile used for reinforcement produced by weaving method of high strength PP - polypropylene and PET - polyester yarn.

GeoMat and GeoCell Erosion Control Products

Erosion control products made from polyethylene or polypropylene used to prevent surface erosion that may be caused by wind and water in the pre-planting on slopes.

Insulation Products

Heat and waterproofing products taking part in Istanbul Teknik's product range while extending the life of the structure, allows the reduction of energy costs.

TrioTex Breathing Roof and Facade Underlays

TrioTex is a flexible and breathable semi-permeable membrane produced by bonding microporous film layer between two spunbond textile layers by thermal treatment.

AquaLay Wet Volume Membranes

AquaLay is the flexible and easy to apply four layers of new generation water-impermeable membrane. It consists of two layers of EVAC layer with two sides coated with nonwoven geotextile. Thanks to both the geotextiles surfaces, it provides excellent adhesion and cohesion to tile adhesive in both the horizontal surface as well as the steep wall.

TekDrain Drainage Boards

TekDrain is the protective layer made of high density polyethylene (HDPE), resistant to plant roots and rot, that separates the curtain wall from soil by protecting against water and humidity.

FileTex Plaster and Reinforcement Meshes

FileTex is the product that fully meets the desired technical requirements for use as reinforcement in plaster applications at inner and outer wall elements of the structures, heat and waterproofing system applications.

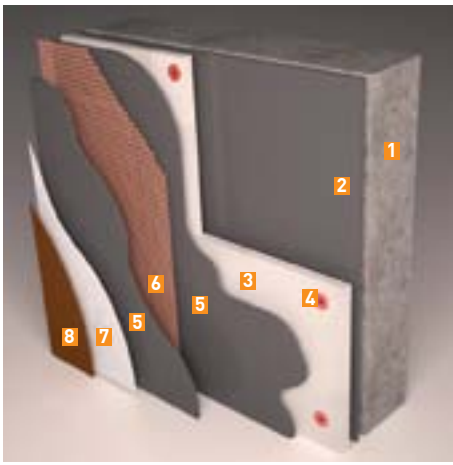
TekFix Fixing Elements

TekFix are the products used to fix the insulation boards which is one of the thermal insulation (ETIC's) system components to brick walls or concrete surfaces.

ProfilEx ETIC's Profiles

ProfilEx is the profile brand used when windows, edges, corners, horizontal or vertical proper gap is required in the structure's thermal insulation ETIC's and plaster applications and completed the system.

Wall 1
Black Plaster 2
Insulation Plate 3
TekFix Anchor 4
Insulation Plaster 5
FileTex Glass Fibre Mesh 6
Decorative Coating 7
Finishing Layer of Paint 8



GeoGreen Green Roof Systems

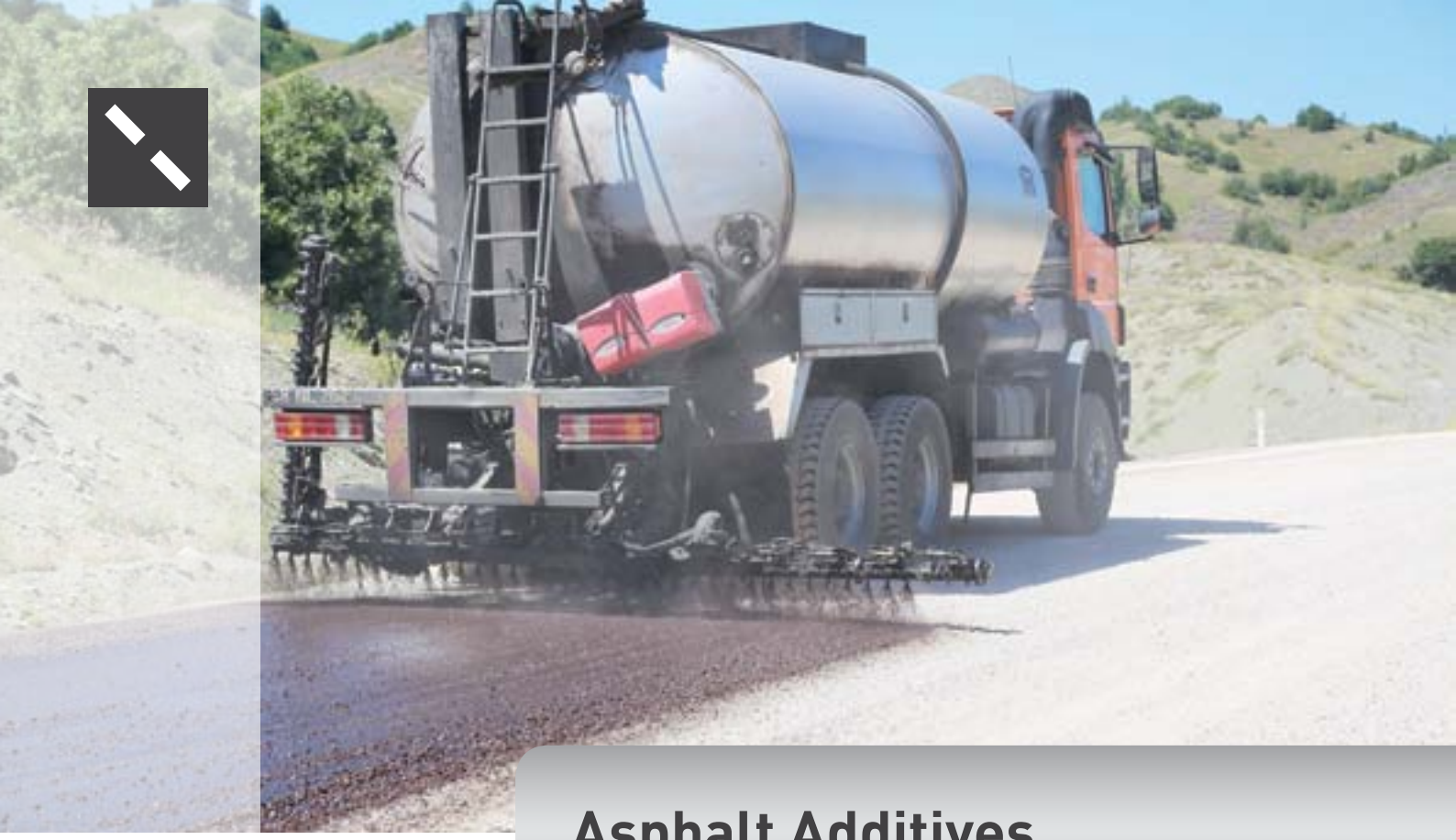
It is a green roof system laid on the roof terrace and parking level of buildings. GeoGreen respectively consists of root protection foil, protective and moisturizing nonwoven geotextile, green roof drainage board and non-woven geotextile filter layer.

Expansion Joints

CoverEx is the expansion joints used to cover the expansion joints in the shopping center, business center, hospitals, housing, parking, airport and industrial buildings having expansion joints; pedestrian, light and heavy vehicle traffic; floors, walls and seismic applications in a secure, durable and decorative shape.

Concrete Reinforcing Fiber

FiberCon is a polymer-based fiber concrete that reduces contraction and shrinkage cracks of cement based products, and improves freeze - thaw, fire, abrasion and fatigue resistance



Asphalt Additives

İstanbul Teknik's asphalt additives offer benefits of more economical cost and more stable and comfortable roadways.

İstanbul Teknik continues its activities with the 'to make that cannot be made' motto offers ideal solutions for road constructions with TeraGrip peeling anti-stripping agents / adhesion promoters, HiperCell high performance cellulose fibers, TeraMuls bitumen emulsifier, Pawma warm mix asphalt additive, AsfaltTex asphalt reinforcement, FlexoDerz hot applied joint sealant and FluxerA cold asphalt patch additive products in its product range.

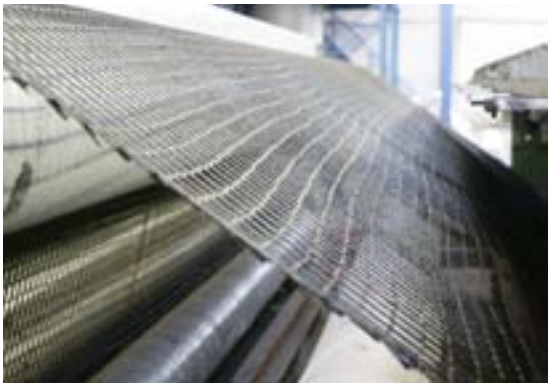
Sub-contracting Works

İstanbul Teknik's GeoArme Retaining Wall Systems can be used at places where approach structures, load-bearing walls, divided highway widening, expropriation areas are to be made and as a greening alternative instead of viaducts at valley crossings.

With GeoSeal membranes, waterproofing membrane coating works of railways and road tunnels and landfills of non-hazardous solid waste and mines, irrigation and expansion canal and ponds opening with cut & cover and drill and blast methods are done with our expert and experienced teams.

Production Plant

- Çorlu Velimeşe location
- 4,500 sqm of closed area
- 3 million sqm of annual geogrid production capacity
- Annual production capacity of 20 million pieces of dowels
- Annual production capacity of 7,200 tons of asphalt additives
- Annual production capacity of 3,000 tons of epoxy
- Annual production capacity of 3,000 tons of PVC Plastisol
- Annual production capacity of 2500 tons FiberCon micro fiber
- Annually 250,000 linear meters of CoverEx dilatation profile
- Annually 5 million sqm of FileTex printing and packaging capacity



R&D Laboratory

Accreditated laboratory service for geosynthetic products, plastic materials, asphalt additives and bitumen modifiers quality control studies and product development works.

Product Range

GeoGreen
Green Roof
Systems

Insulation
Products

Geosynthetic
Products

Conrete
Polymer
Reinforcing
Fibers

Marble and
Natural
Stone
Products

Asphalt
Products

ForTex Uniaxial Geogrid

ForTex is high-strength materials developed for the reinforcement needs of various civil engineering applications.

ForTex produced by high strength and low elongation woven polyester yarn coated with PVC polymer to be protected from mechanical damage. Thanks to a custom-designed sewing process to be more robust in nodes, high performance is provided.

Application areas that require ForTex (uni-axial) strength

- Divided highway expansion works
- Approach walls of interchanges
- Expropriation areas and space saving works
- Bridge abutment walls and bridge approach walls
- Park and garden walls

Technical Properties

Product	Standard (TS EN ISO 10319)			
	Tensile Strength (kN/m)		Elongation at Nominal Strength (%)	
	MD	CMD	MD	CMD
ForTex GG 40/20 P	40	20	12(±2)	12(±2)
ForTex GG 60/20 P	60	20	12(±2)	12(±2)
ForTex GG 80/30 P	80	30	12(±2)	12(±2)
ForTex GG 100/30 P	100	30	12(±2)	12(±2)
ForTex GG 150/30 P	150	30	12(±2)	12(±2)
ForTex GG 120/30 P	120	30	12(±2)	12(±2)
ForTex GG 150/50 P	150	50	12(±2)	12(±2)
ForTex GG 200/50 P	200	50	12(±2)	12(±2)

ForTex Biaxial Geogrid

In preventing local seating in applications to be made on weak soil by reducing the amount of base and sub-base filling.

Embankment works of highway expansion projects and in soil remediation applications for reducing the amount of foundation material to avoid potential seating in railway applications that will be made on poor bearing soil.

Benefits

- Durable, long-lasting, reliable, low-cost and resistant to seismic and dynamic loads.
- Allows the laying of filler layer on weak soil to be laid in finer thickness.
- A platform is created with the filler formed on weak soils and different seating is blocked.
- It is applied in layers on top of weak soils and increases the bearing capacity of the ground.
- Reduces the amount of earthwork excavation on existing ground without the desired qualifications.
- Durable, long-lasting, reliable, low-cost and resistant to seismic and dynamic loads.

Technical Properties

Product	Standard (TS EN ISO 10319)			
	Tensile Strength (kN/m)		Elongation at Nominal Strength (%)	
	MD	CMD	MD	CMD
ForTex GG 20/20 P	20	20	12(±2)	12(±2)
ForTex GG 30/30 P	30	30	12(±2)	12(±2)
ForTex GG 40/40 P	40	40	12(±2)	12(±2)
ForTex GG 60/60 P	60	60	12(±2)	12(±2)
ForTex GG 80/80 P	80	80	12(±2)	12(±2)
ForTex GG 100/100 P	100	100	12(±2)	12(±2)
ForTex GG 150/150 P	150	150	12(±2)	12(±2)

GeoArme Retaining Structures System

GeoArme retaining structure system is an alternative system to the traditional retaining wall system consisting of reinforced concrete curtain and masonry retaining walls. In the GeoArme Retaining System, structure is equipped with ForTex GG geogrid reinforcement having a tensile strength of the soil behind.

Unlike conventional systems, this structure keeps the lateral soil load formed standing not with its own structural strength or weight but with ForTex GG geogrids having tensile strength.

Aesthetic Surface Types

It is designed as two different systems according to the front surface shape and slope of the wall surface.

- System with blocks coated front surface
- System with curved front surface and bundles

Application Areas

- Split road widening
- Locations where the high cost of expropriation
- For space saving
- Bridge abutment walls
- Instead of bridge approach walls
- Park and garden perimeter walls

Benefits

- ForTex geogrids having a high tensile strength and operating with the principle of clamping the ground makes the filler stable by meeting the horizontal loads in the filler. Thus, GeoArme retaining structure system offers fast, economical and practical application solutions.
- Geogrid and fillers form a composite structure.
- Since it is a light system, it can also be applied in weaker ground on which may be critical when using reinforced concrete and stone walls applications
- Since flexible, it is more tolerant towards seating on the ground with seating potential.
- Without using materials such as cement, iron and mold provides practical and rapid application possibility.
- Thanks to the system flexibility, it is applied in the desired geometry with preferred color and types of blocks.
- Allows for applications with aesthetic appearance in planting applications.
- It has a wall design to operate safely both statically and during a seismic event.

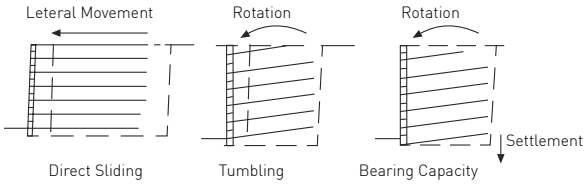
Sieve Size (mm)	% Passed
125 (5″)	100
75 (3″)	85-100
12,5 (1/2″)	25-100

Sieve Size (mm)	% Passed
2 (No.10)	15-100
0,59 (No.30)	10-65
0,075 (No.200)	<15

Stability Studies

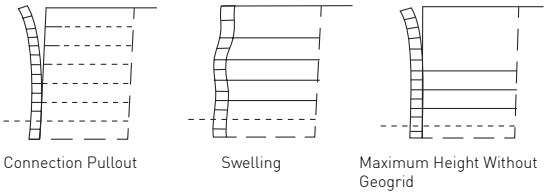
Internal Stability Study

In this step, the geogrid strength, spacing and length required for designing the backfill as a whole are determined.



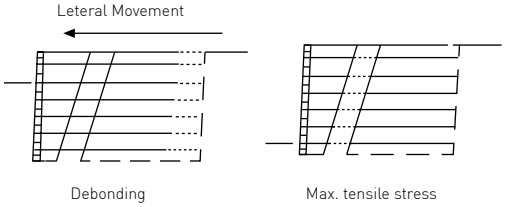
Surface Stability Study

The integrity of the building blocks placed in front of the geogrid with the retaining structure is studied.



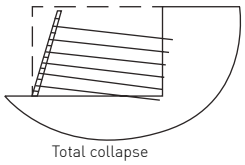
External Stability Study

Stability is examined as a block mass against shear, tumbling and settlement.



Total Collapse Failure Analysis

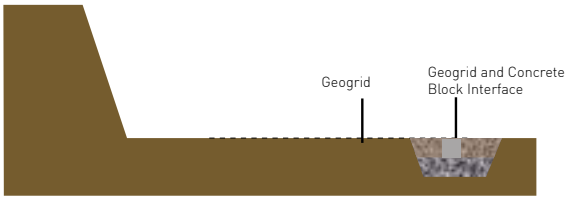
In this step, the collapse failure analysis for the reinforced backfill and load-bearing foundation soil is performed.



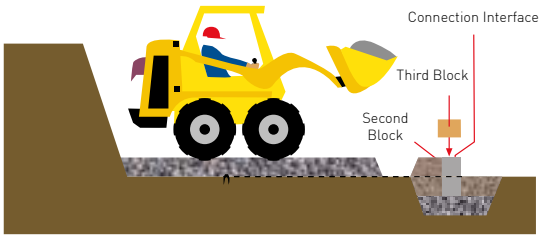
***The design method and the methods used herein this document are cited from FHWA and AASHTO standards.**

Application

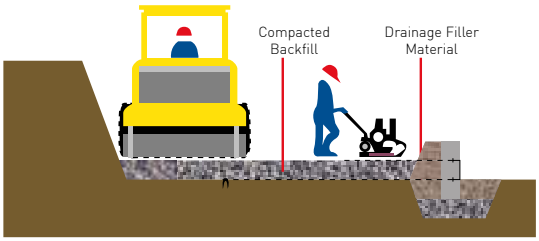
A trench is excavated a small scale foundation is formed at the bottom of the trench by companting the gravel. The first row of blocks is placed on this foundation. The drainage pipe is installed inside the blocks and the trench is filled with granular material.



The firs row of **ForTex GG** unidirectional geogrid is applied horizontally as perpendicular to the wall surface. The end of the geogrid is placed onto the block.



The second row of blocks is placed onto the applied geogrid row. Drainage backfill with 0.50 m width is applied and the backfill compacted to adequately.



The upper backfill for the **ForTex GG** geogrids are applied and compacting. As the compaction criterion, the standard PROCTOR must be around 95%. Compaction works around the block must be performed with manual compactor for up to 1 m.

The geogrids are laid according to the project and the aforementioned steps (2, 3, 4) are repeated.

İzoTeknik Non-woven Geotextiles

İzoTeknik is multi-colored non-woven textile product produced by the method of mechanical needling of the polypropylene-based fibers and heat treatment implementation.

Benefits

- It is manufactured from high strength polyester fibers.
- It has a structure in which the dispersion of fibers is provided in a homogeneous manner with close needling and superior production technology.
- With a production capacity of up to 6 m width by providing material and labor savings with minimum overlap at large areas enables rapid application advantages.
- Due to the heat treatment applied during the production, contraction and elongation amounts are controlled and durable with respect to standard geotextiles.

GeoTeknik PP Nonwoven Geotextiles

GeoTeknik PP is white non-woven textile products produced by the method of needling of the polypropylene-based fibers and heat treatment implementation.

Benefits

- It is manufactured from 100% pure homogeneous premium quality polypropylene fibers.
- It has a structure in which the dispersion of fibers is provided in a homogeneous manner with close needling and superior production technology.
- With a production capacity of up to 6 m width by providing material and labor savings with minimum overlap at large areas enables rapid application advantages.
- Due to the heat treatment applied during the production, contraction and elongation amounts are controlled and durable with respect to standard geotextiles.
- Thanks to polypropylene fibers, it is lighter, thicker and non-absorbent.
- It is resistant to acid and alkaline environments.

GeoTeknik PP and İzoTeknik (multicolor) ve İzoTeknik WT (white) non woven geotextiles can be used in all kinds of infrastructure and superstructure projects with confidence and success. Please take advice and suggestions of manufacturer / supplier regarding place and purpose of use.

Application Areas

As for filtering

- In the French drain canal
- In the green roof drainage
- In the perforated pipe coating
- In the vertical applications such as tunnels and retaining walls

As for separation;

Using İzoTeknik under foundation in structures to be implemented on weak grounds prevents the overflowing of the structure foundation to the floor, provides the stabilization of the ground and reduces the risk of unexpected differential settlement.

In coastal structures, it is used as a filter and bedding material to prevent the displacement of filler material due to the wave action. Separates coarse and fine filter material used in the filler effectively, with the suction force resulting from the wave movement prevents rough material to mix with fine material.

As for protection

- Due to pressure spreading effect feature, it is used to protect the waterproofing membrane layer in building foundations.
- Protects geomembranes applied in open land against tearing or bruises caused by mechanical punctures and excessive friction.

Technical Properties

Test	Standard	Unit	1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	10000	12000
Weight	EN ISO 9864	gr/m^2	150	200	250	300	350	400	500	600	700	800	1000	1200
Thickness (at 2 kPa)	EN ISO 9863-1	mm	1,3	1,9	2,1	2,4	2,7	2,8	3,5	4,0	4,5	5,2	6,5	7,5
Tensile Strenght (CD-MD)	EN ISO 10319	kN/m	6/7	10/11	12/14	14/17	17/22	22/26	28/35	33/38	35/40	38/42	40/45	45/50
Elongation at Break (CD-MD)	EN ISO 10319	%	min. 50	min. 50	min. 50	min. 50	min. 50	min. 50	min. 50	min. 50	min. 50	min. 50	min. 50	min. 50
Static Puncture	EN ISO 12236	N	1300	1700	2400	2700	3100	3700	4500	5300	6300	7400	10000	12000
Cone Drop Test	EN ISO 13433	mm	28	25	21	16	13	10	7	3	2	1	0	0
Water Permeability, V_{H50}	EN ISO 11058	l/s* m^2	100	95	80	70	65	50	40	30	25	22	20	18
Opening Size, O_{90}	EN ISO 12956	mm	0,13	0,11	0,085	0,077	0,076	0,074	0,071	0,068	0,063	0,061	0,055	0,051

Application Areas of İzoTeknik Geotextiles


Separator


Protector


Filter


Drainage


Eroison Control

		ROOF			BASE		SUBSTRUCTURE				
		Heat Insulation Separation	Waterproofing	Earth Filtration	Water-proofing Protection	French Drainage	Different Soil Separation	Solid and Dangerous Waste	Tunnel Insulation Protection	Offshore Structures	Slope Eroison Control
İzoTeknik	1000	*		*		*					
	1500	*	*	*	*	*					
	2000	*	*	*	*	*	*				*
	2500		*	*	*	*	*				*
	3000		*		*		*				*
	4000		*		*						*
	5000		*		*			*			
	6000							*	*		
	7000							*	*	*	
	8000							*	*	*	
	9000							*		*	
	10000							*		*	
	11000							*		*	
	12000							*			

		ROOF			BASE		SUBSTRUCTURE				
		Heat Insulation Separation	Waterproofing	Earth Filtration	Water-proofing Protection	French Drainage	Different Soil Separation	Solid and Dangerous Waste	Tunnel Insulation Protection	Offshore Structures	Slope Eroison Control
İzoTeknik WT	1000	*		*		*					
	1500	*	*	*	*	*					
	2000	*	*	*	*	*	*				*
	2500		*	*	*	*	*				*
	3000		*		*		*				*
	4000		*		*						*
	5000		*		*			*			
	6000							*	*		
	7000							*	*	*	
	8000							*	*	*	
	9000							*		*	
	10000							*		*	
	11000							*		*	
	12000							*			

GeoSeal Membranes

GeoSeal Membrane is a geosynthetic material used for liquid impermeability providing insulation, separation and coating solutions for transportation tunnels, building foundations and environmental protection projects.

GeoSeal is divided into three, including PVC, HDPE and GCL.

GeoSeal PVC is a geomembrane material made of polyvinyl chloride providing water impermeability in foundation roofs, ponds and tunnel projects.

Application areas

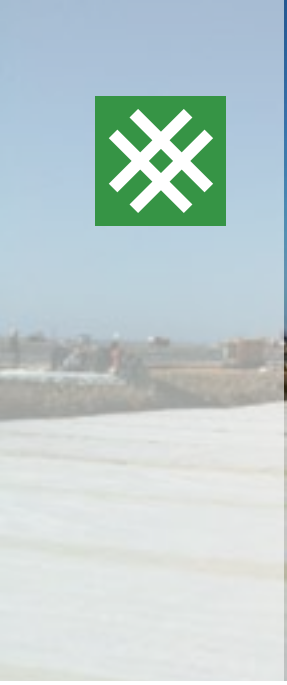
- Building foundations and curtain walls insulation
- Terrace and garden terrace roofs
- Drinking water reservoirs
- Water reservoirs
- Light metal roofs
- Irrigation canals
- Ponds
- Subway stations
- Railway, subway and highway tunnels projects

Benefits

- Long life
- High resistance to chemical and mechanical effects
- Plant root resistant
- UV resistant and carrier types provide high resistance against external conditions
- Signal layered products allow visual inspection
- Safely, fast and easy to apply using special welding machines
- Joint leak test can be made with double row seam weld

Technical Properties

Thickness (mm)	1.2 - 1.5 - 2.0 - 2.5 - 3.0
Roll Width (m)	1.60 - 2.10
Roll Height (m)	20 - 25
Elongation at Break (%)	≥ 250
Cold Bending	≤ -20 °C
Hydrostatic Pressure Strength	Waterproof
Root Strength	



GeoSeal GCL

GeoSeal HDPE

GeoSeal GCL Clay Based Geomembrane

GeoSeal GCL Clay Based Geomembrane is the impermeable material formed by intertwining natural sodium bentonite material by the rugged geotextiles.
Application areas

- Solid waste landfills
- Mines landfills
- Irrigation, fire and golf course ponds
- Irrigation canals
- Water reservoirs
- Building foundation insulation projects

Benefits

- When compared to compacted clay layer application, it provides a great cost advantage.
- When compared to clay layer of the same impermeability, better fulfills the impermeability function with 100-150 times less volume. Provides significant savings in storage and transport costs.
- It has excellent hydraulic and mechanical properties thanks to the natural bentonite and woven and non-woven geotextiles that surrounds it.
- There is no need for special equipment in laying the rolls.
- When compared to the compacted clay layer making up much more volume, transporting and implementation is much easier and faster.

Technical Properties

Cover Layer (Polypropylene non-woven) (g/m²)	200 - 300
Carrier Layer (Polypropylene woven) (g/m²)	100 - 200
BENTONIT LAYER	
Weight (g/m²)	4000 - 5000
Swell Index (ml/2g)	≥ 24
Fluid Loss	≤ 18

GEOSYNTHETIC CLAY LINER	
Weight (g/m²)	4300 - 5500
Thickness (mm)	5 - 7 mm
Roll Width (m) / Boy (m)	4-5 m / 40-50 m
Impermeability (m/sn)	$5x10^{-11}$
Tensile Strenght (kN/m)	≥ 12
Peel Strength (N/m)	>600

GeoSeal HDPE is the geomembrane material manufactured from high density polyethylene providing impermeability in projects such as landfill sites, mines landfills, acid pools, tanks courts, ponds and irrigation canals

Application areas

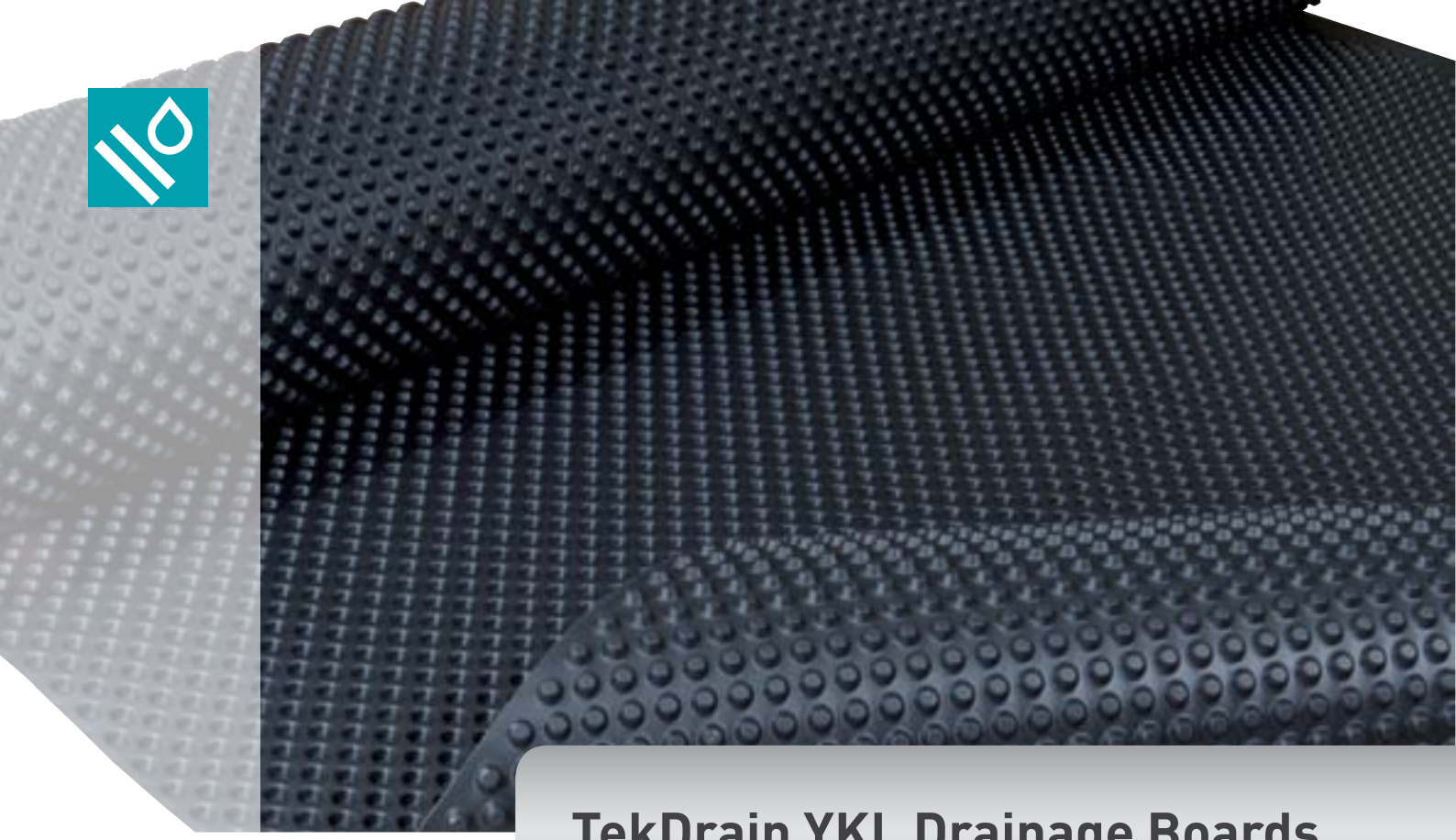
- Landfill areas
- Mines landfills
- Acid pools
- Tanks courts
- Waste water treatment plants
- Irrigation canals
- Ponds projects

Benefits

- Has long life due to the specific resin containing antioxidant and carbon black in its structure.
- Has high strength and elongation.
- Resistant to chemical attacks.
- High UV resistance due to the carbon black.
- Allows making air pressure scraping and peeling tests through the seams thanks to the special welding method.
- Large size of rolls allows application to be performed quickly and practically in large area projects.
- With one or both sides rough products, application is possible in high slope areas.
- For options of utilization in different applications, lower density materials (LLDPE, VLDPE) can also be produced.

Technical Properties

Thickness	ASTM D 5199	mm	0.75 - 3.00
Density	ASTM D 1505	g/cm³	≥ 0.94
Yield Strength	ASTM D 6693 type IV	kN/m	12-45
Yield Elongation		%	≥ 12
Shear Strength		kN/m	24-80
Elongation at Break		%	≥ 750
Tear Strength	ASTM D 1004	N	95-380
Puncture Strength	ASTM D 1603	N	280-1000
Oxidative Induction Time (OIT)	ASTM D 3895	dk.	≥100



TekDrain YKL Drainage Boards

TekDrain YKL Drainage Boards is the protective layer made of high density polyethylene (HDPE), resistant to plant roots and rot, that separates the curtain wall from soil by protecting against water and humidity.

Application areas

It is recommended to be used to protect water and heat insulation applied in foundation wall insulation.

Benefits

- Protects water insulation from damage that may occur when making earth filling.
- Bubbles of air remaining enables the breathing of walls.
- Ensures even distribution of the pressure load given by the soil.
- Distributes the load that may overload on one point.

Technical Properties

TekDrain YKL 400

Test	Standard	Unit	Value
Compressive Strength	TS EN 826	kN/m²	>150
Strength at Break (MD - CD)	DIN 53354	N/5 cm	>200 >200
Elongation at Break (MD - CD)	DIN 53354	N/5 cm	%20 %25
Weight	-	gr/m²	400
Roll Weight	-	kg	16/24
Roll Length	-	m	20/30
Roll Width	-	m	2,0
Thickness	-	mm	0,55
Stud Height	-	mm	8,0

TekDrain YKL 500

Test	Standard	Unit	Value
Compressive Strength	TS EN 826	kN/m²	>200
Strength at Break (MD - CD)	DIN 53354	N/5 cm	>250 >250
Elongation at Break (MD - CD)	DIN 53354	N/5 cm	%20 %25
Weight	-	gr/m²	500
Roll Weight	-	kg	20/30
Roll Length	-	m	20/25
Roll Width	-	m	2,0
Thickness	-	mm	0,65
Stud Height	-	mm	8,0

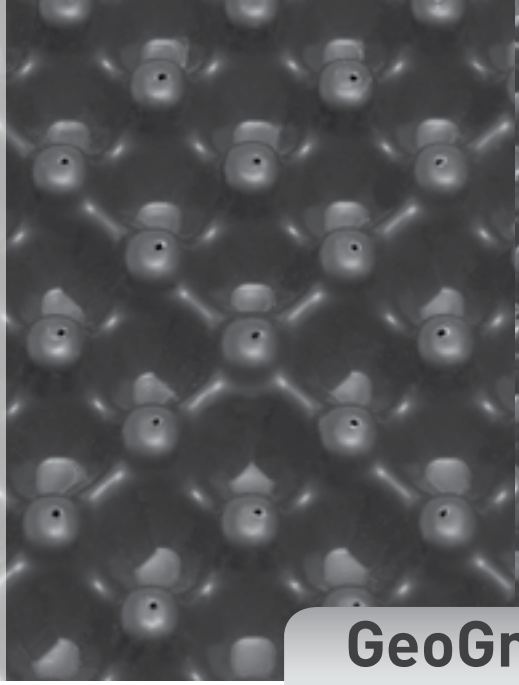
TekDrain YKL 600

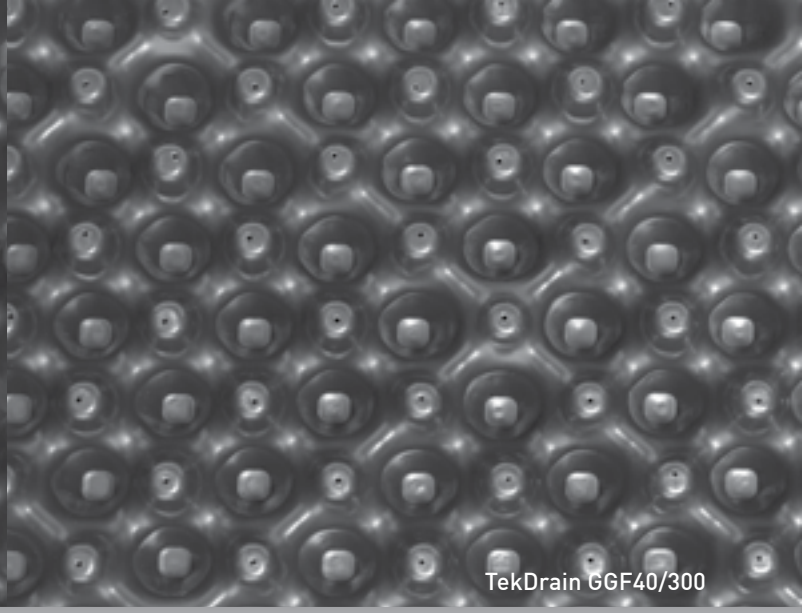
Test	Standard	Unit	Value
Compressive Strength	TS EN 826	kN/m²	>250
Strength at Break (MD - CD)	DIN 53354	N/5 cm	>300 >300
Elongation at Break (MD - CD)	DIN 53354	N/5 cm	%20 %25
Weight	-	gr/m²	600
Roll Weight	-	kg	24/36
Roll Length	-	m	20
Roll Width	-	m	2,0
Thickness	-	mm	0,80
Stud Height	-	mm	8,0

TekDrain YKL 700

Test	Standard	Unit	Value
Compressive Strength	TS EN 826	kN/m²	>300
Strength at Break (MD - CD)	DIN 53354	N/5 cm	>350 >350
Elongation at Break (MD - CD)	DIN 53354	N/5 cm	%20 %25
Weight	-	gr/m²	700
Roll Weight	-	kg	28
Roll Length	-	m	20
Roll Width	-	m	2,0
Thickness	-	mm	0,93
Stud Height	-	mm	8,0

TekDrainGF 25





TekDrain GGF40/300

GeoGreen Green Roof Systems

TekDrain GF 25 and GF 40/300 Green Roof Durable and high strength materials made of HDPE polyethylene laid on building terrace roofs and top of parking lot. Due to water retention capacity in the reservoir, it does not require extra watering costs and enables the growth of plants.

Benefits

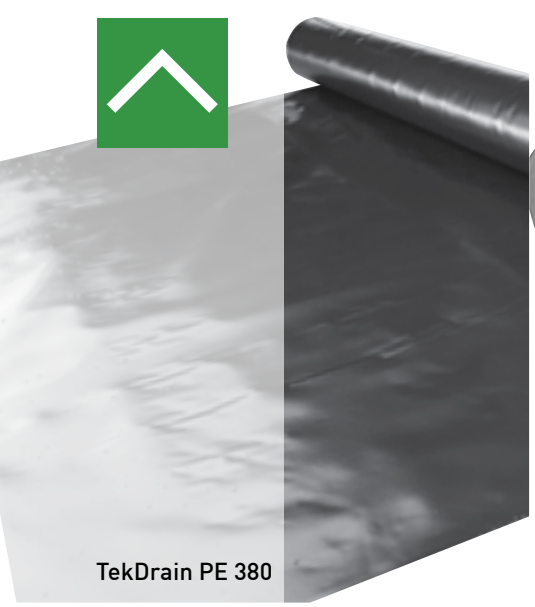
- It assumes a very important role in building insulation.
- In the costs of heating and cooling systems of green building practices and in carbon dioxide emissions, it provides a significant reduction.
- Thanks to the layer of plants, building's roof facade system can be protected against external influences.
- By multiple use of the plant layer contributes to urban water management.
- The green roof and facade systems that can hold a significant amount of rainwater within the body also contribute to purify the water.
- Investment in green building systems ensures saving also in the operation and investments of the sewerage systems and water treatment system.
- It is known that green roofs also improve the air quality.
- It reduces the effects of solar radiation affecting the structure.

Technical Properties (GF 25)

Test	GF 25 320 kN/m²	GF 25 370 kN/m²	GF 25 420 kN/m²
Compressive Strength	TS EN ISO 25619-320 kN/m²	TS EN ISO 25619-370 kN/m²	TS EN ISO 25619-420 kN/m²
Weigth	1.4 kg/m²	1.5 kg/m²	1.7 kg/m²
Weight With Full Of Water	5.5 kg/m²	5.5 kg/m²	6.18 kg/m²
Roll Length	2 m	2 m	2 m
Roll Width	1 m	1 m	1 m
Water Storage Capacity	5 lt/m²	5 lt/m²	5 lt/m²
Stud Height	25 mm	25 mm	25 mm
Water Flow Capacity	İ=0.01 0,95 lt/(m.s) İ=0.02 1,35 lt/(m.s) İ=0.03 2,10 lt/(m.s)	İ=0.01 0,95 lt/(m.s) İ=0.02 1,35 lt/(m.s) İ=0.03 2,10 lt/(m.s)	İ=0.01 0,95 lt/(m.s) İ=0.02 1,35 lt/(m.s) İ=0,03 2,10 lt/(m.s)

Technical Properties (GGF 40/300)

Test	Standart	Unit	GF 40
Weight	TS EN 1849-1	kg/m²	1,9
Stud Height		mm	40
Maximum Compressive Strength	TS EN ISO 25619-1	kN/m²	170
Compressive Strength With Full Of Water	TS EN ISO 25619-1	kN/m²	300
Water Storage Capacity	TS EN ISO 12958	lt/m²	9,0
Compactness Ratio		lt	18
Water Flow Capacity	DIN EN ISO 12598		İ=0.01 1,80 lt/(m.s) İ=0.02 2,50 lt/(m.s) İ=0.05 3,85 lt/(m.s)
Roll Width		cm	100
Roll Length		cm	200
Material Type			HDPE



TekDrain PE 380

GeoTeknik 1100

İzoTeknik 5000

TekDrain PE 380 Root Protection Layer

A black cover resistant against plant root and which is made of low-density polyethylene.

Application areas and benefits

It is a versatile material used for the purpose of vapor barrier between the two concrete blocks and to avoid damaging the insulation of plant and tree roots in the green roof. The rolls should be laid by overlapping a minimum of 1 m. It prevents damage to the insulation of the plant roots. It is used between two concrete blocks and prevents the ascent of the moisture and vapor from the bottom.

Technical Properties (TekDrain PE 380)

Test	Standard	Unit	Value
Weight	TS EN ISO 9864	gr/m²	380
Thickness	TS EN ISO 9863-1	µm	400
Density	EN ISO 1183-1/A	g/cm³	0.935
Tensile Strenght at 40 °C at 20 °C	EN ISO 527-3	N/ mm²	40-45 20-25
Elongation at Break	EN ISO 527-3	%	>400
Sd (Vapor Permeability)	EN 1931	m	>200
Kd (Coefficient Of Piece Friction)			0.29
Roll Size			5 x 30 m
Colour			Black
Raw Material			LDPE

İzoTeknik 5000 Non-woven Protective and Moisturizing Geotextile

It is a multicolor non-woven textile product produced so as to protect by the method of needling of pure polyester based fibers much thinner than a millimeter and by applying heat treatment.

Application areas

- In the terrace roofing applications, using on the thermal insulation panels protects the underlying material from the impact.
- It used to protect the waterproofing application in building foundations.
- To protect geomembranes against tearing or bruises caused by punctures and excessive friction.

GeoTeknik 1100 Nonwoven Geotextile Filter

It is a white non-woven textile product produced as a filtration material by the method of needling of pure polypropylene based fibers much thinner than a millimeter and by applying heat treatment.

Application areas

- In the Green roof drainage
- In the French drain canals
- In the perforated pipe coatings
- In the vertical applications such as tunnels and retaining walls
- In coastal structures

Technical Properties (GeoTeknik 1100)

Test	Standard	Unit	Value
Weight		g/m²	110
Thickness (at 2 kPa)	TS EN ISO 9863-1	mm	0.90
Tensile Strenght (CD-MD)	TS EN ISO 10319	kN/m	6 7
Elongation at Break	TS EN ISO 10319	%	50-80
Static Puncture	TS EN ISO 12236	N	1200
Cone Drop Test	TS EN ISO 13433	mm	33
Permeability	TS EN ISO 11058	l/m²s m/s	110 0.11
Opening Size	TS EN ISO 12956	mm	0.14

Technical Properties (İzoTeknik 5000)

Test	Standard	Unit	Value
Weight	EN ISO 9864	gr/m²	500
Thickness (at 2 kPa)	EN ISO 9863-1	mm	2,7
Tensile Strenght (CD-MD)	EN ISO 10319	kN/m	7
Elongation at Break (CD-MD)	EN ISO 10319	%	min. 60
Static Puncture	EN ISO 12236	N	2040
Cone Drop Test	EN ISO 13433	mm	10,04
Water Permeability, V_{H50}	EN ISO 11058	m/s	0,034
Opening Size	EN ISO 12956	mm	0,071
Water Flow Capacity, MD, 20kN	EN ISO 12958	l/m/s	$2{,}36x10^{-3}$
Protection Efficiency	EN 13719	%	6,190

TrioTex Roof and Facade Underlays

TrioTex Breathing Underlays

TrioTex Breathing Underlays is a flexible and breathable membrane produced by binding of the microporous film between two spunbond textile layers.

- It is a part of the system in air spaced and thermally insulated wall applications.
- It is a modern under-tile cover for supported and unsupported as well as ventilated and non-ventilated roofs.
- Used as a membrane under the shingles.
- Applied under the coating at interlocking metal roof.
- Selection should be made according to the required specifications.

Benefits

- Exports the moisture inside the structure effectively with the breathing feature.
- Improves the efficiency of the cold and hot air inside the structure with the wind-cut feature. It also prevents erosion of the thermal insulation.
- Completely impervious to water. Protects the outer surface of the insulation from rain and snow.
- According to the aging test, it is a long-lasting product resistant to the effects of UV and heat which the structure is exposed to.
- High-strength, longer use with a single application and heat-loss reducing characteristics make TrioTex Breathing Waterproof Roof and Curtain Wall Covers an environmentally friendly product.
- Equipped with a coating that prevents disturbing reflections.

Technical Properties

Test	Standart	Unit	150	170	200
EN 13859-1 Flexible sheets for waterproofing - Definitions and characteristics of underlays Part 1: Underlays for discontinuous roofing; Part 2: Underlays for walls					
Unit Weight	EN 1849-2	g/m²	150	170	200
Roll Weight		kg	8.25	12.75	15
Behaviour Against Fire	EN 13501 EN 11925-2	Class	E	E	E
Water Impermeability	EN 1928 EN 13111	Class	W1	W1	W1
Vapor Diffusion (Sd)	EN 12572 EN 1931	m	0.02	0.02	0.02
Maximum Tensile Strength (MD/CD)	EN 12311-2 EN 13859-2	N / 50 mm	92 / 62	130/100	170/120
Elongation At Maximum Tensile Strength (MD/CD)	EN 12311-2 EN 13859-1;2	%	40/60	60/80	90/130
Tear Strength (MD/CD)	EN 12310-2 EN 13859-1;2	N	50/80	90/120	140/170
Dimensional Stability	EN 1107-2	%	< 2	< 2	< 2
Flexibility at Low Temperature	EN 1109 EN 495-5	°C	-20	-20	-20
Resistance of Air Diffusiont	EN 12114 EN 13859-1;2	m³/m².h.50Pa	< 0.03	< 0.03	< 0.03
Thermal Resistance		°C	-40 /+80	-40 /+80	-40 /+80
Water Colone	EN 20811	cm	>150	>150	>200
Change of Properties After Artificial Ageing Water Impermeability Class Tensile Strength After Artificial Ageing Elongation After Artificial Ageing	EN 1297	 Class % %	 W1 < 20 < 35	 W1 < 20 < 35	 W1 < 20 < 35

Technical Properties

Test	Standart	Unit	F-90	120
EN 13859-1 Flexible sheets for waterproofing - Definitions and characteristics of underlays Part 1: Underlays for discontinuous roofing; Part 2: Underlays for walls				
Unit Weight	EN 1849-2	g/m²	90	110
Roll Weight		kg	6.75	8.25
Behaviour Against Fire	EN 13501 EN 11925-2	Class	E	E
Water Impermeability	EN 1928 EN 13111	Class	W1	W1
Vapor Diffusion (Sd)	EN 12572 EN 1931	m	0.02	0.02
Maximum Tensile Strength (MD/CD)	EN 12311-2 EN 13859-2	N / 50 mm	50/60	92/62
Elongation At Maximum Tensile Strength (MD/CD)	EN 12311-2 EN 13859-1;2	%	30/50	40/60
Tear Strength (MD/CD)	EN 12310-2 EN 13859-1;2	N	40/70	50/80
Dimensional Stability	EN 1107-2	%	< 2	< 2
Flexibility at Low Temperature	EN 1109 EN 495-5	°C	-20	-20
Resistance of Air Diffusiont	EN 12114 EN 13859-1;2	m³/m².h.50Pa	<0.02	<0.03
Thermal Resistance		°C	-40 /+80	-40 /+80
Water Colone	EN 20811	cm	>150	>150
Change of Properties After Artificial Ageing Water Impermeability Class Tensile Strength After Artificial Ageing Elongation After Artificial Ageing	EN 1297	 Class % %	 W1 < 20 < 35	 W1 < 20 < 35

TrioTex Reflective Vapor Barriers

TrioTex Reflective Vapor Barriers is a triple-layer vapor barrier which reflects the heat energy and provides additional insulation. Consists of polyethylene foil, polyethylene carrier mesh and aluminized polypropylene layers.

Application areas

- Used on all ventilated or unventilated roof structures.
- When used in the interior of the roof covering at the living spaces at the roof space prevents heat loss by convection. Leads to the formation of suitable climatic conditions.
- Used on trapezoidal covering in the interlocking metal roof.

Benefits

- Water vapor impermeable. Provides extra vapor and wind insulation.
- Creates an insulating wall against water, moisture and the wind.
- Designed for the living environment in the attic.
- Flexible and easy to apply.
- Prevents the loss of heat caused by free air circulation.
- Thanks to the carrier layer in the middle, it is very resistant to tearing.
- High strength and longer use with a single application makes TrioTex Reflective Vapor Barriers an environmentally friendly product.

Technical Properties

Test	Standart	Unit	95	180
EN 13984 Flexible sheets for waterproofing - Plastic and rubber vapour control layers - Definitions and characteristics				
Unit Weight	EN 1849-2	g/m²	95	180
Roll Weight	EN 1849-2	kg	7.12	13.5
Thickness	EN 1849-2	mm	E	E
Behaviour Against Fire	EN 13501 EN 11925-2	Class	Conforming	Conforming
Water Impermeability	EN 1928	-	30	60
Vapor Diffusion (Sd)	EN 12572 EN 1931	m	>50 / >50	>150 / >150
Maximum Tensile Strength (MD/CD)	EN 12311-2 EN 13859-2	N / 50 mm	>70 / >110	>130 / >200
Elongation At Maximum Tensile Strength (MD/CD)	EN 12311-2 EN 13859-1;2	%	>40 / >60	>70 / >110
Tear Strength (MD/CD)	EN 12310-2 EN 13859-1;2	N	npd	npd
Impact Resistance	EN 12691		npd	npd
Bonding Resistance	EN 12317-2	N	npd	npd
Resistance of Under Loading Deformation	EN 13984	-	npd	npd
Alkaline Resistance	EN 13984 EN 12311-2	-	Conforming	Conforming
Resistance of Vapor Diffusion After Artificial Ageing	EN 1296 EN 1931	-	Sufficient	Sufficient

TrioTex Vapor Control Layers

TrioTex Vapor Control Layers

TrioTex Vapor Control Layers is a two-layer cover composed of a nonwoven polypropylene (Spunbond) layer coated with a special film layer and allowing a certain amount of vapor to flow under the heat insulation. It has vapor cutting property with respect to breathing covers and also limited breathability characteristics with respect to vapor barriers. For this reason, they are referred to as the vapor restraining or vapor control covers. They take part in the systems created with breathing water impermeable covers.

Application areas

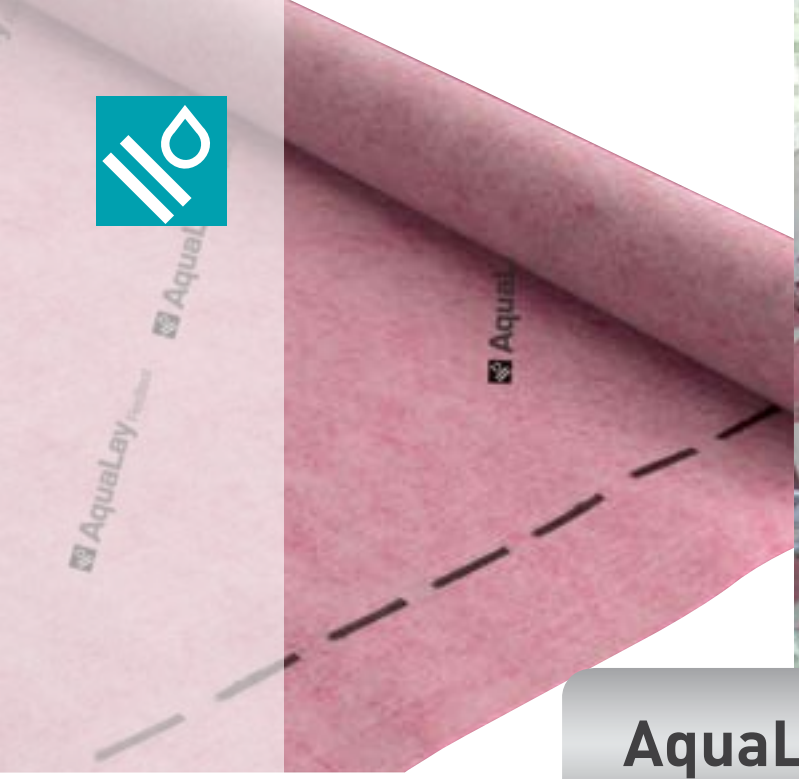
- Used on all ventilated or unventilated roof structures.
- When used in the interior of the roof covering at the living spaces at the roof space prevents heat loss by convection. Leads to the formation of suitable climatic conditions.

Benefits

- It reduces the vapor reaching the insulation.
- It maintains a certain level of indoor humidity.
- It is used as an alternative to the vapor barrier in the structures with not much vapor release.
- Designed for the living environment in the attic.

Technical Properties

Test	Standart	Unit	VBR 120	VBR 140
EN 13984 Flexible sheets for waterproofing - Plastic and rubber vapour control layers - Definitions and characteristics				
Unit Weight	EN 1849-2	g/m²	120	140
Roll Weight	EN 1849-2	kg	9.50	10.5
Thickness	EN 1849-2	mm	0.32	E *
Behaviour Against Fire	EN 13501 EN 11925-2	Class	E*	Conforming
Water Impermeability	EN 1928	-	Sufficient	12
Vapor Diffusion (Sd)	EN 12572 EN 1931	m	5	190 / >160
Maximum Tensile Strength (MD/CD)	EN 12311-2 EN 13859-2	N / 50 mm	150/130	npd
Elongation At Maximum Tensile Strength (MD/CD)	EN 12311-2 EN 13859-1;2	%	40/40	npd
Tear Strength (MD/CD)	EN 12310-2 EN 13859-1;2	N	100/110	npd
Impact Resistance	EN 12691		npd	npd
Bonding Resistance	EN 12317-2	°C	npd	npd
Resistance of Under Loading Deformation	EN 13984	-	npd	npd
Alkaline Resistance	EN 13984 EN 12311-2	-	npd	Conforming
Resistance of Vapor Diffusion After Artificial Ageing	EN 1296 EN 1931	-	Sufficient	Sufficient
* Bottomed Witn Insulating Compound				



AquaLay

It is the protective covering laid under the ceramic or natural stone cladding in wet areas such as terrace, balcony, kitchen, bath, bathroom and pools. Aqualay is produced as (3-layer) when the middle layer between two non-woven layers is PE film, or as (4-layer) when it is EVA film.

Technical Properties

Test	Standart	Unit	WS
EN 13956; 2013 Flexible sheet for waterproofing - Plastic and rubber sheets for roof waterproofing - Definitions and characteristics			
Unit Weight	EN 1849-2	g/m²	270
Roll Weight 1x5/1x30/2x20		kg	1,7 / 8,7 / 11,5
Thickness	EN 1849-2	mm	0,57
Maximum Tensile Strength (MD/CMD)	EN 12311-2 (A)	N / 50 mm	≥200 / ≥200
Elongation At Maximum Tensile Strength (MD/CMD)		%	≥20 / ≥10
Tear Strength	EN 12310-2	N	≥75 / ≥100
Impact Resistance	EN 12961 (A)	mm	≥500
Shear Resistance of Joint	EN 12317-2	N/50	≥230
Water Impermeabiltiy	EN 1928		Passed
Flexibility at Low Temperature	EN 495-5	°C	-20
Behaviour Against Fire	EN 13505-1	Class	E
Vapor Diffusion (Sd)	EN 1931 (B)	m	3,2
Water Vapor Diffusion Resistance Factor (μ)		MN.s/g	16
Clause of Vapor Resistance According to CTE - DB HS 1 (Z>10MN.s/g)			
Working Temperature		°C	-20 ile +80
Cement Based Adhesive Type C2 in 28 Days (in laboratory condition at 70 °C in 14 days)			
Tensile	EN 1348	N/mm²	≥0,7
Shear	EN 1324	N/mm²	≥1
Water Resistance of Bonding (with C2 cement)	Water Colone	1m/24 saat	Waterproof

Technical Properties

Test	Standart	Unit	RedIsol
EN 13956; 2013 Flexible sheet for waterproofing - Plastic and rubber sheets for roof waterproofing - Definitions and characteristics			
Unit Weight	EN 1849-2	g/m²	270
Roll Weight 1x5/1x30/2x20		kg	1,7 / 8,7 / 11,5
Thickness	EN 1849-2	mm	0,57
Maximum Tensile Strength (MD/CMD)	EN 12311-2 (A)	N / 50 mm	≥260 / ≥180
Elongation At Maximum Tensile Strength (MD/CMD)		%	≥50 / ≥50
Tear Strength	EN 12310-2	N	≥100 / ≥100
Impact Resistance	EN 12961 (A)	mm	≥300

FileTex Natural Stone and Marble Protection Mesh

FileTex Natural Stone and Marble Protection Meshes is the ideal protection net made of E-glass fibers compatible with epoxy and water-based glue for protecting marble, mosaics and natural stones.

Technical Properties (FileTex 160 g)

	160 g/m² E-Glass (4x4 mm)
Tex	
Warp Direction	136x2
Weft Direction	300
Breaking Strength	
Warp Direction	35 kN / m
Weft Direction	40 kN / m
Elongation	
Warp Direction	1,7%
Weft Direction	2,8%
Water Content	≤%1
Resine Content	%16±2
Tensile Strength	
Warp Direction	≥600 N/50 mm
Weft Direction	≥800 N/50 mm

Technical Properties (FileTex 500 g)

	500 g/m² E Glass
Weave	
Tex	
Warp Direction	1200
Weft Direction	1200
Density	
Warp Direction	2,2 ± 0,8 ends/inç
Weft Direction	2 ± 0,8 ends/inç
Weight	
Raw Material	500 ± 10 g / m²
Water Content	≤%0,2
Resine Content	
Tensile Strength	
Warp Direction	≥3550 N/50 mm
Weft Direction	≥3150 N/50 mm

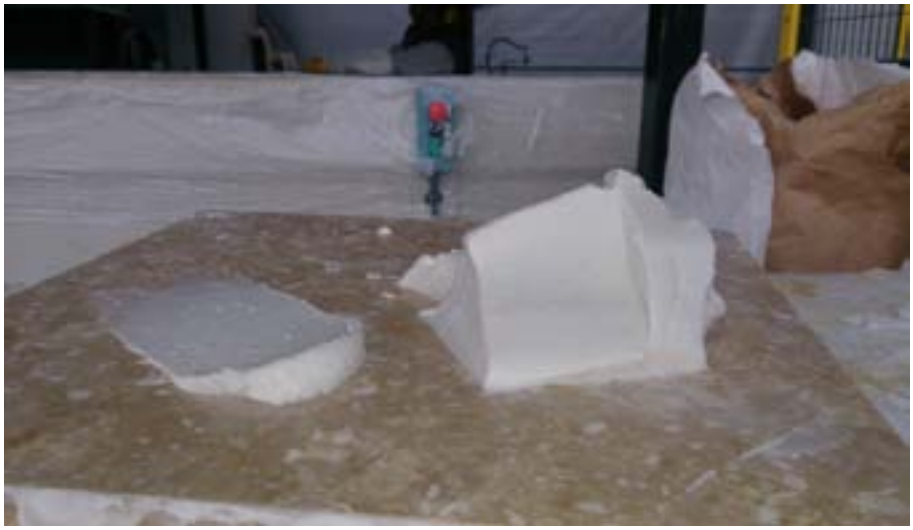
EpoxİstT Epoxy Glue, Bonder, Gel and Filler System

EpoxİstT is a family of two-component low viscosity products which do not require solvents and used for filling cracks / cavities in transparent marble slabs and bonding with the net.

- Easy to apply.
- It does not collapse.
- Non-yellowing
- Usually it is enough for one coat application.
- According to the local weather conditions are produced in two different types.
- Two-component (A + B) binding material.
- The smell is mild.
- Adapts to the appearance of the applied floor.
- EpoxİstT can be colored with dye pigments.

Marble Separator

Used to protect marble materials with sensitive surfaces. Inserted between the marble plates in the form of separators. Production of various types and thicknesses are available. Prevents damage to the plates during shipping, handling and storage.



FiberCon Concrete Polymer Reinforcing Fiber

FiberCon is a polymer-based fiber concrete that reduces contraction and shrinkage cracks of cement based products, and improves freeze - thaw, fire and wear resistance.

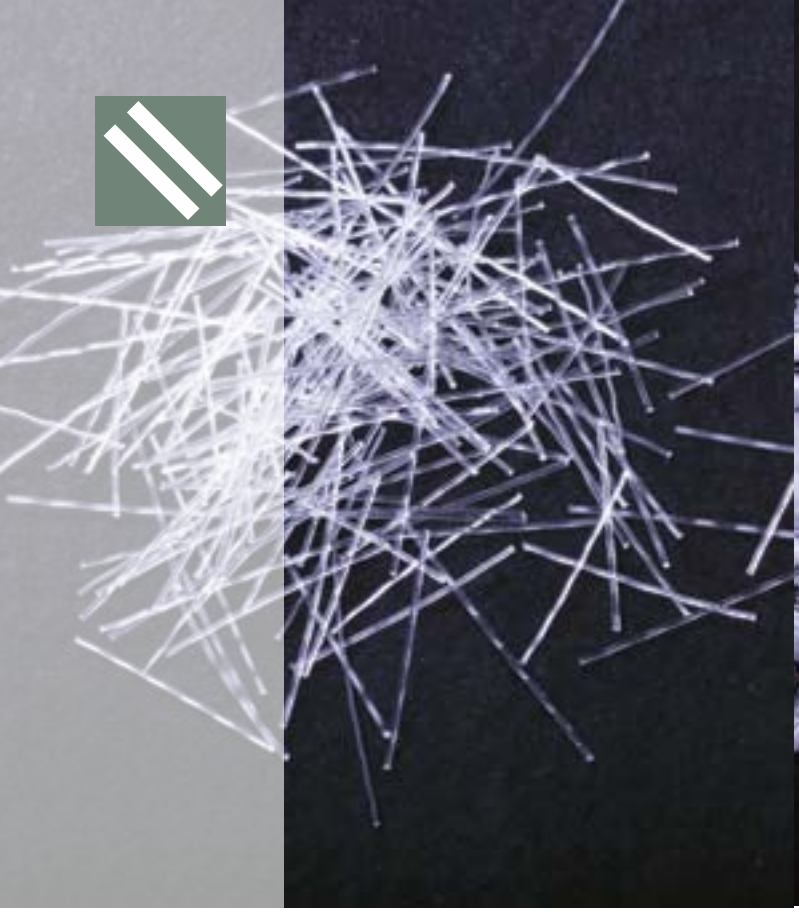
FiberCon MLF Concrete Reinforcing Fiber

FiberCon MLF Concrete Reinforcing Fiber is a polymer-based fiber concrete that reduces contraction and shrinkage cracks of cement based products, and improves freeze - thaw, fire and wear resistance.

FiberCon MLF Concrete Reinforcing Fiber consisting of 100% polypropylene fibers and homogeneously dispersed in the concrete mix is insoluble in water and does not decompose. High alkali resistant and resists to acid and base effects.

Technical Properties FiberCon MLF

Density	0.91 g/cm³
Fiber Length	6 / 12 / 18 / 24 mm
Appearance	Soft and multiflament form
Tensile Strength	380 - 650 Mpa
Elongation At Break	>%15
Young's Module	>3400 Mpa
Acid and Alkalin Resistance	High resistant
WaterAbsorbtion	None
Melting Point	160 - 180 °C



FiberCon MF Concrete Reinforcing Fiber

FiberCon MF Concrete Reinforcing Fiber is a concrete reinforcement with superior physical and chemical properties and designed for the task of non-structural reinforcing. Ribbed surface structure gives the concrete ballistic characteristics and increases the energy absorption capability. At the same time provides increased bending, tensile and compressive strength of the concrete it is used for.
Consists of polyolefin composite polymer fibers homogeneously dispersed in the concrete mix, insoluble in water and does not decompose. High alkali resistant and resists to acid and base effects.

Technical Properties FiberCon MF

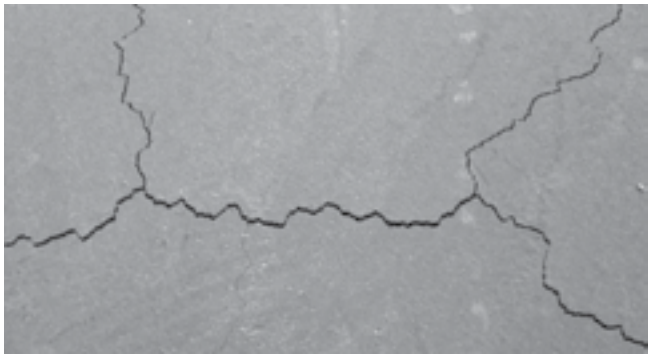
Density	0.95 g/cm³
Fiber length	40 / 50 / 60 mm
Appearance	Reinforced
Tensile Strength	750 - 900 Mpa
Elongation At Break	>%15
Young's Module	>5500 Mpa
Acid and Alkalin Resistance	High resistant
Water Absorbtion	None
Melting Point	180 - 200 °C

FiberCon FF Concrete Reinforcing Fiber

FiberCon FF Concrete Reinforcing Fiber is a polymer-based fiber concrete that reduces contraction and shrinkage cracks of cement based products, and improves freeze - thaw, fire and wear resistance. Moreover, thanks to its tissue in the form of net, reduces also, settlement cracking. FiberCon FF Concrete Reinforcing Fiber consisting of 100% polypropylene fibers and homogeneously dispersed in the concrete mix is insoluble in water and does not decompose. High alkali resistant and resists to acid and base effects.

Technical Properties FiberCon FF

Density	0.91 g/cm³
Fiber length	9 / 18 mm
Appearance	Net shape and strip form
Tensile Strength	450 - 700 Mpa
Elongation At Break	>%15
Young's Module	>3800 Mpa
Acid and Alkalin Resistance	High resistant
Water Absorbtion	None
Melting Point	160 - 180 °C



Asphalt Additives

TeraGrip Antistripping Agent

Peel strength enhancing admixtures, also known as the Anti-Striping Agent or Adhesion Promoter, establish a stronger bond between aggregates and bitumen. The use of TeraGrip extends the life of the asphalt road with a very small additional cost, prevents cracks and surface deformation.

The major cause of deteriorations such as ondulation, cracking and potholes starting at the surface mainly caused by the bitumen peeling from the aggregate surface and insufficient adhesion.

The physical, chemical and mineralogical characteristics of the aggregate in asphalt concrete with chemical properties of bitumen affect the adhesion forces between aggregate and the bitumen.

Indirect tensile strength (TSR) ratio increased by better adhesion of bitumen.

TeraGrip is produced in liquid (AN, PH) and solid flake (ANG) forms. TeraGrip AN & ANG are polyamine based additives and have very slight odour unlike other amine based additives.

TeraGrip PH is produced with polyphosphoric acid.
Does not have odor nuisance as usual amine additives.

TeraGrip gives excellent results with limestone and a variety of high silica aggregates such as basalt, granite.

Material properties and external factors that can affect the bitumen/aggregate bond

Aggregate properties	Bitumen properties	Mixture properties	External factors
Mineralogy	Rheology	Void content	Rainfall
Surface texture	Electrical polarity	Permeability	Humidity
Porosity	Constitution	Bitumen content	Water pH
Dust		Bitumen film thickness	Presence of salts
Durability		Filler type	Temperature
Surface area		Aggregate grading	Temperature cycling
Moisture content		Type of mixture	Traffic
Shape		Chemical additives	Design
Weathering		Polymer modifications	Workmanship
			Drainage

Reference: Shell Bitumen Handbook

HiperCell High Performance Cellulose

Gap graded asphalt or Stone Mastic Asphalt (SMA) design improves asphalt road durability against deformations under heavy traffic. SMA design has more bitumen content than usual hot mix asphalt, therefore HiperCell needed to prevent bleeding and drain down of excessive bitumen in the mixture.

Benefits

- Prevents drain down and bleeding of bitumen
- Generates a three-dimensional reinforcement inside asphalt
- Does not create dust when dosing because the pellet form
- Improves fatigue cracking resistance
- Increases mechanical stability
- Increases the modulus of elasticity
- HiperCell has lower dust in pellets, thus contains more fiber.

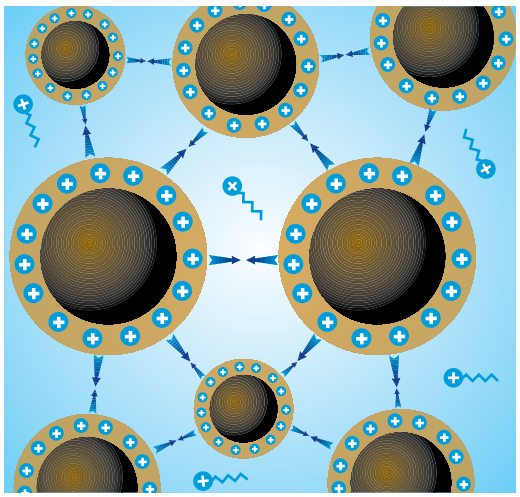
TeraMuls Asphalt Emulsifier

The bitumen used as a binder in asphalt road construction is a solid material at normal ambient temperature. Bitumen is mixed with water to obtain a liquid, sprayable binder. TeraMuls Asphalt Emulsifier is one of the most important components in emulsifying bitumen with water by chemical and mechanical processes.

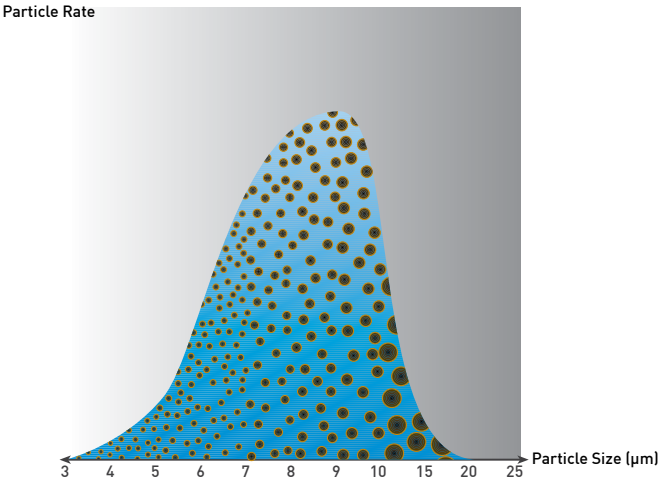
Benefits

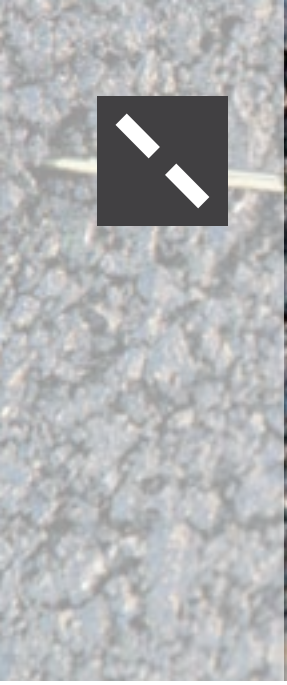
- TeraMuls covers surface of micro bitumen particles in water. Positive charged TeraMuls covered bitumen particles repels each other so that particles stays balanced in emulson.
- Desired setting time can be adjusted according to application (tack coat, recycling, etc.).
- Emulsions can be transported to longer distances without setting, while maintaining stability for longer storage period. Emusion sticking capability and stripping resitance can be improved with TeraMuls.
- Different emulsions can be produced to suit different applications.
- It can be applied with the conventional asphalt equipment.

Stable Emulsion



Particle Size






Pawma

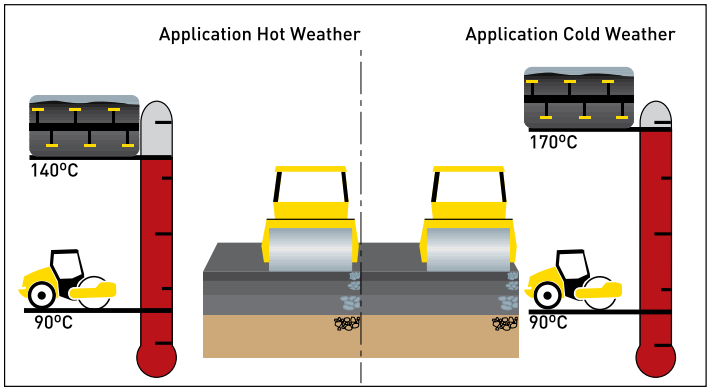

AsfaltTex

Pawma Warm Mix Asphalt Additives

Pawma Warm Mix Asphalt Additive provides ease of application by increasing the workability of the mixture. Ensures asphalt mixture to stay longer in workable form and to obtain a more efficient compression. Pawma gives additional workability to asphalt and allows laying to be made even in low ambient temperatures. Pawma is a liquid chemical additive. Dosage is only %0,20 - 0,30% of bitumen weight.

Benefits

- Increases stripping resistance and tensile strength ratio of asphalt.
- Provides the opportunity to work in cold and adverse weather conditions.
- Provides ease of application and more efficient compression.
- Lower mixing temperature allows energy saving thus resources can be used efficiently.
- Much lower greenhouse gas emissions reduce negative impacts on the health, safety and environment.
- It does not adversely affect asphalts chemical and reological structure.
- Asphalt has better workability between laying and compaction.
- Compression can be made by less energy, thus operation cost can be reduced.
- Low operating temperatures reduce bitumen aging.
- Asphalt mixture can be transported to longer distances because asphalt remains workable for longer period of time.
- Low operating temperatures reduce accidents by allowing more convenient and careful use of the asphalt plant and machinery.

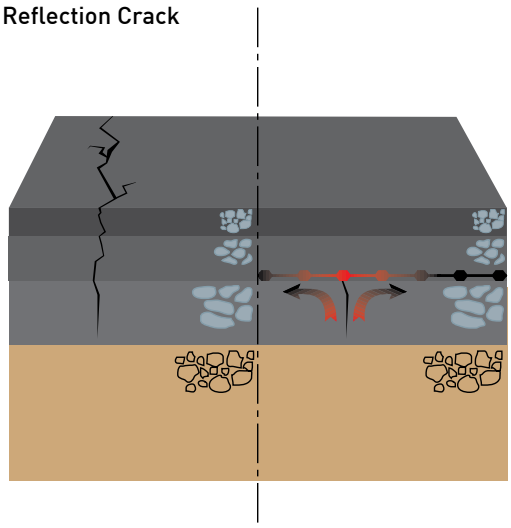


AsfaltTex Asphalt Reinforcement

AsfaltTex is type of geogrid produced by woven glass fibers and coated with polymer bitumen in square shape. The nodes are produced using a specially designed suture method for higher strength. This method achieves higher performance at the nodes.

Implementation and Application Areas

- The surface shall be scraped off and the surface cracks shall be filled. Surface repair required before application of AsfaltTex.
- Application surface shall be free from asphalt pieces, dust and debris.
- The application surfaces shall be completely free from moisture and water.
- The temperature of the application surface shall be higher than +5 °C and lower than +55 °C.



FlexoDerz

FluxerA

FlexoDerz Crack Fillers

FlexoDerz is a rubber modified bitumen filling compound used to fill surface cracks formed in asphalt coatings and concrete joints.

Benefits

- Highly elastic. From -20 °C to +120 °C retains its elasticity.
- Can be heated in a double-walled special vessel or directly on the furnace.

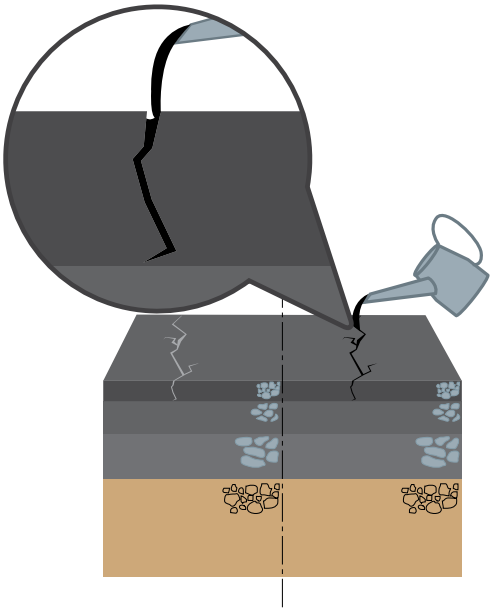
FluxerA Asphalt Cold Patch Additives

FluxerA is an additive which enables asphalt mixture to be stored in bags or in bulk form after cooling for several months without deterioration.

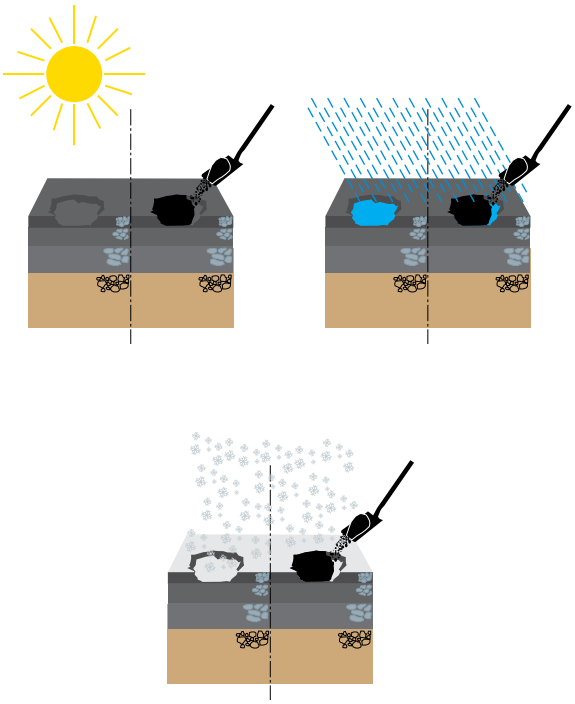
Benefits

- After the asphalt production, during the storage period aggregate coated with bitumen do not stick together. Thanks to special recipe of the FluxerA the asphalt hardens in a short time perfectly when poured into a pothole.
- Asphalt produced with FluxerA is resistant to cracking.
- Application is possible in cold and humid weather conditions thanks to asphalt patch produced with FluxerA additives.
- No need for special equipment to make patches. The application is very simple.
- Road can be opened to traffic immediately after application.

Maintenance of Cracks



Maintenance of Cracks With Ready Cold Asphalt











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