

BONTEC®

GEOTEXTILES AND SPECIAL
ENGINEERED PRODUCTS

We undercover the world



Bontec®

Bontec is a Low & Bonar product brand of geosynthetics which offers a large range of nonwoven and woven geotextiles produced from raw materials including polypropylene and polyethylene. Bontec is widely used in Civil Engineering for separation, filtration, reinforcement, drainage and/or protection.

A large number of available product types meet the individual project or application needs in terms of tensile strength, density, mechanical properties and water permeability.

With Bontec, Low & Bonar is a reliable supplier of qualitative geosynthetics, available for on-time delivery, fulfilling the needs of our customers for more than 30 years.

Bontec introduction	03
Quality and certification	04
Use of geotextiles	06
NW	08
Protec	10
SNW	12
BonarPave	14
SG	16
HF	18
Projects around the world	20
Installation guidelines	22

Quality and Certification

Low & Bonar is committed to produce materials that meet high quality standards at a constant level. In order to achieve this, quality is an integral part of all processes related to the production of Bontec geotextiles.

All our manufacturing sites are equipped with fully operational on-site quality control labs. The labs are equipped with state-of-the-art equipment to allow testing of our Bontec geotextiles according to the relevant international test standards (EN, ISO, ASTM). All test equipment undergoes regular preventive maintenance and calibration to ensure accurate test results.

Our commitment to quality already starts with the purchase of raw materials, as each supplier and raw material needs to be pre-approved on the basis of trials and compliance with our requirements before actual supply starts. For each delivery of raw material, a certificate of analysis is requested and reviewed to ensure product conformity.

Throughout our actual production process, a multitude of production parameters are monitored in order to optimize our production process and minimize the risk of a non-conformity at a later stage in the production chain. Our intermediate products are subjected to regular testing by our laboratories.

At the end of our production chain, the finished product is fully tested to ensure compliance with the defined and declared product specifications. Should it occur that a product – intermediate or finished – fails to meet the specifications, this product will be clearly identified as non-conforming material and barred from further sale as first quality.

All our geotextiles are packed and stored to ensure minimal damage during handling and storage. Measures to protect the products from degradation through UV, such as UV stable packaging, are also taken.

Next to the constant quality control of our products and production, systems are in place to ensure a full traceability from the finished product back to the raw materials, providing access to quality data, production information and reports related to the related processes and materials.

ISO certification

All Low & Bonar production sites have valid ISO 9001 certification in place, with some sites already being certified for over 25 years. Our nonwoven production plants also hold the ISO 14001 certificate for environmental management. The compliance of our systems to the ISO standards are checked by the external notified bodies at least every year.

CE marking

All Bontec European manufacturing sites have obtained approval for CE marking. For geotextiles the control is performed based on Regulation (EU) 305/2011, also known as the Construction Products Regulation (CPR), laying down the conditions for the placing on the market of construction products (including geosynthetics).

Product certification

Next to the above mentioned management system certificates, Low & Bonar has obtained several product certificates for its geotextiles, in order to fulfill requirements specific countries might lay down for geotextiles.

All these product certificates require a regular assessment of the facilities and systems and/or 3rd party compliance testing of Bontec geotextiles. Some of the certificates that are available for Bontec geotextiles:*

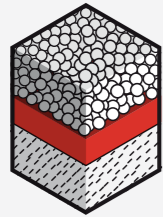
- Asqual (France)
- Benor (Belgium)
- IVG (Germany)
- HPQ (Germany)
- Norgeospec (Finland, Sweden, Norway and Estonia)

Documentation

On request, Bontec geotextiles can be provided with test reports to present the result of our quality control. Copies of certificates for relevant products or production locations can also be provided.

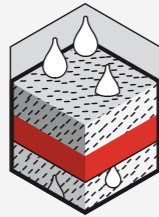
* Not all our geotextiles are covered by these certificates. Please contact your Low & Bonar representative for further details.

The use of geotextiles



Separation

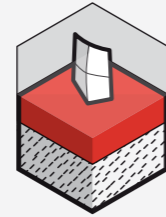
Separation is the process of preventing two dissimilar materials from mixing. In this function, a geotextile is most often required to prevent the undesirable mixing of fill and natural soils or of two different types of fill.



Filtration

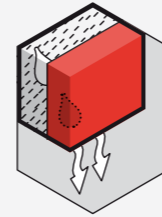
The use of geotextiles in filter applications is probably the oldest, most widely known and most used function of geotextiles.

The geotextile is used to prevent fine soil particles from moving with the water flow normal to the plane.



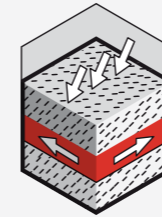
Protection

A geotextile can be used as a protective layer against mechanical damage during installation and after the completion of a particular construction project. It will help prevent the puncturing of geomembranes used in constructions such as tunnels, landfills or reservoirs.



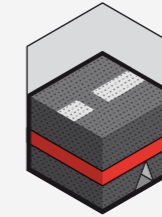
Drainage

When functioning as a drain, a geotextile acts as a conduit for the movement of liquids or gasses in the plane of the geotextile. Relatively thick nonwoven geotextiles are the products most commonly used. Selection should be based on transmissivity, which is the capacity for in-plane flow.



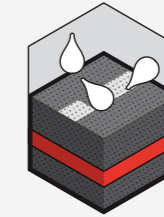
Reinforcement

The geotextile interacts with soil through friction or adhesion forces to resist tensile or shear forces. To provide reinforcement, a geotextile must have sufficient strength, low elongation and low creep to avoid movement of the structure.



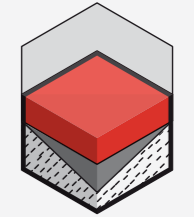
Stress relief

The geotextile is installed as an interlayer in asphalt pavement layers of new or resurfaced roads. Providing stress relief, it will reduce reflective, fatigue and temperature cracking by delaying and arresting crack propagation in the asphalt overlay.



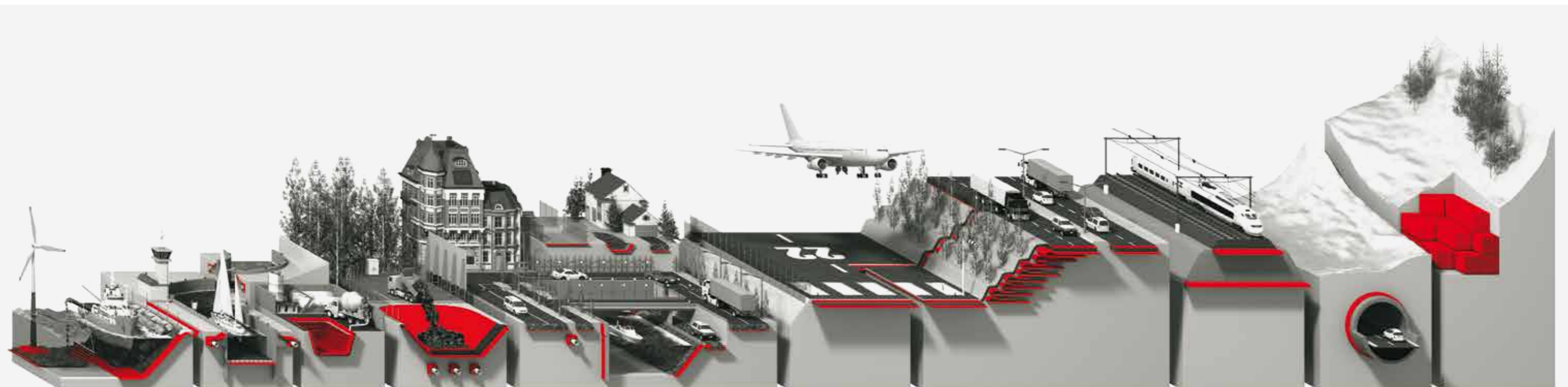
Interlayer barrier

When saturated with bond coat, the geotextile will act as a barrier between asphalt layers. It prevents ingress of water and oxygen into bound and unbound layers of the road construction, thus delaying deterioration and prolonging the load bearing capacity of the road structure itself.



Erosion control

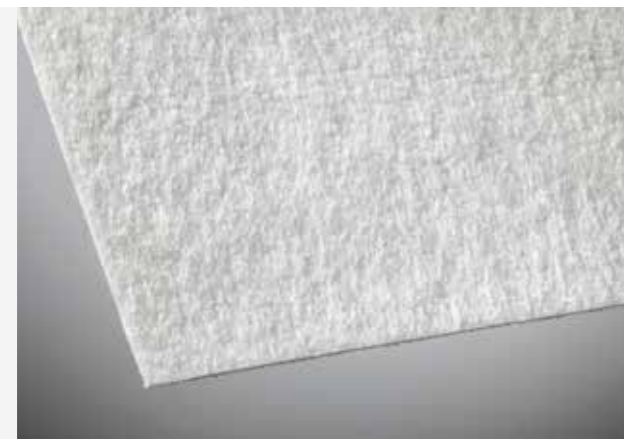
In erosion control, the geotextile protects soil surfaces from the tractive forces of moving water or wind and rainfall erosion.



NW

Needle punched nonwoven geotextile for separation and filtration

Bontec NW is a range of needle punched and thermally bonded geotextiles that offer the highest levels of engineering performance and quality standards. The NW range is used in various applications including site access roads, hard standings, road and railways, drainage blankets and car parks.



The hydraulic properties of Bontec NW nonwovens stimulate the build-up of a natural soil filter in the adjoining soil to ensure long term filtration stability.

Bontec NW nonwoven geotextiles lend valuable qualities to numerous groundwork construction applications. In railtrack maintenance for example, Bontec NW minimises potential track failure which can be caused by pumping (ie the upward movement of fine particles from the underlying formation into the ballast).

Technical details

Bontec NW nonwovens are a range of 100% virgin polypropylene needle punched and thermally bonded nonwoven staple fibre geotextiles.

- CBR puncture strengths up to 0.85 to 7.5 kN
- Uniform tensile strengths in all directions throughout the length and width of every roll up to 45 kN per metre width
- Available in rolls of 5.25 m or other widths to order
- Standard roll length 100 m

Functions

- Separation
- Filtration

Application areas

- Site access roads
- Hardstandings
- New roadways
- Car parks
- Industrial units
- Railways

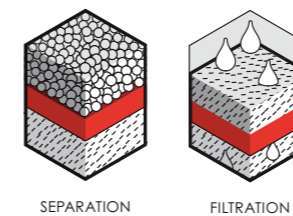
- French drains
- Granular drainage blankets

Features and benefits

- Durability of minimal 100 years
- Designed to offer optimum performance per unit weight
- Thermal and mechanical bonding process ensures superior performance at lower weight and lower thickness resulting in a lower transport cost'

- The product enables water flow normal to the plane which is usually several times greater than that required by the design
- A range of consistent aperture sizes to accommodate different soils
- Excellent mechanical robustness and hydraulic properties
- Significant reduction of carbon footprint and costs compared to traditional methods

Product functions



Protec

Needlepunched nonwoven geotextile for protection

Protec is a range of needlepunched nonwoven geotextiles optimally designed to offer greater thickness and elongations compared to standard needlepunched nonwovens. This makes them ideal for protection and drainage applications where a thick cushioning layer and high elongation are key requirements for the design.



Functions

- Protection
- Erosion control
- Drainage

Application areas

- Pipeline protection
- Coasts
- Landfills

Features and benefits

- Durability of minimal 100 years
- High mechanical robustness
- Good cushion resistance combined with high elongation
- High resistance to puncture and abrasion
- Great water permeability combined with excellent filtration
- High resistance to UV degradation available within the range

- Significant reduction of carbon footprint and costs compared to traditional methods

Also available: a flame-retardant version, very well suited for use in protection and drainage applications where there is a high risk of exposure to flames, such as tunnels.

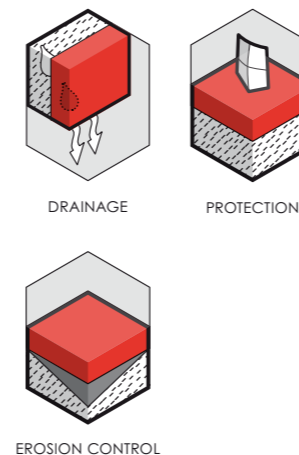


Typical areas of use include the protection of valuable pipeline coatings during backfilling, as an erosion control layer under rock armour in coastal defence projects, and as a protective cushion layer in landfills and reservoirs. Due to its high thicknesses, Protec nonwoven geotextile will provide higher water flow in the plane values compared to standard needlepunched nonwoven geotextile, allowing it to also function as a drainage layer in some applications.

Technical details

- Tensile strengths ranging from 20 kN/m to 100 kN/m combined with elongations of 80% or higher, resulting in high energy index values
- Available in weights from 300 to 1500 g/m²
- Fabric thicknesses up to 10 mm
- CBR puncture values up to 20 kN
- Produced using 100% virgin polypropylene staple fibres
- Project specific dimensions possible

Product functions



SNW

Needle punched nonwoven geotextile for separation, filtration and protection

Bontec SNW are needle punched specially bonded geotextiles designed to offer outstanding performance at a lower thickness compared to traditional protection geotextiles. The principal functions of SNW are protection, separation and filtration.



Through the optimum combination of polymer and our unique production technology, our SNW product range is the lower thickness alternative to standard geotextiles for protection of impermeable membranes in landfill and reservoir construction as well as for coastal protection from erosion below rock and concrete defences.

Specially engineered SNW product types with UV additives are available for geobags for coastal or riverbank protection and other applications.

Technical details

- SNW nonwoven geotextiles are produced using 100% virgin polypropylene staple fibres
- Available in weights of 120 to 1000 g/m²
- CBR puncture resistance up to 12 kN available
- Rolls are 5.25 m wide, other widths available on demand
- Standard roll length 100 m

Functions

- Protection
- Separation
- Filtration

Application areas

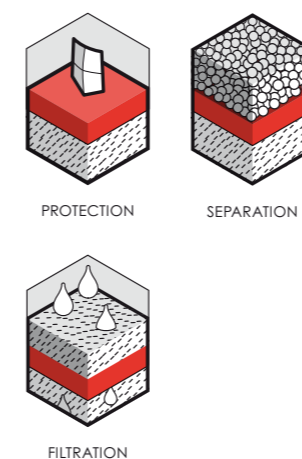
- Landfills
- Reservoirs
- Groundworks
- Coastal engineering
- Geobags

Features and benefits

- Durability of minimal 100 years
- Maximum performance to cost ratios
- High elongation
- High damage resistance even for the most demanding fill types
- Excellent resistance to acids and alkalis at ambient temperatures
- High UV resistance for requested product types

- High biological resistance
- High puncture resistance and tensile strength
- Outstanding protection to membranes and liners (for landfills, reservoirs)
- High permeability and fine pore size
- Ideal for more demanding applications – ie coastal engineering
- Significant reduction of carbon footprint and costs compared to traditional methods

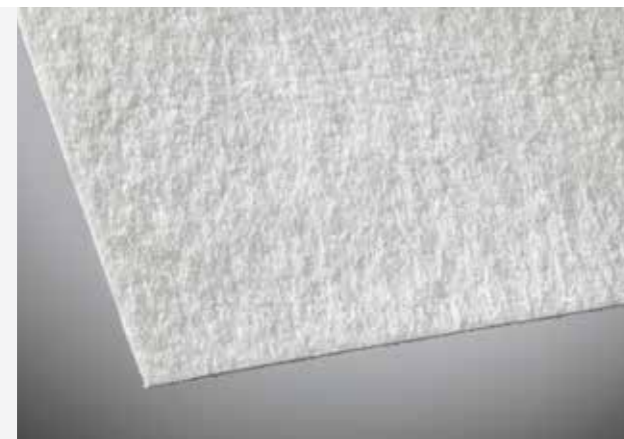
Product functions



BonarPave

Special engineered needle punched nonwoven geotextile for stress relief

BonarPave is a needlepunched nonwoven geotextile that, when installed on a bitumous tack coat, performs as a stress absorbing membrane interlayer and inhibits the upward propagation of cracks from the underlying pavement into the overlay. This condition is often referred to as reflective crack control.



The BonarPave geotextile offers optimum tensile strength with high corresponding elongation. This ensures that the saturated nonwoven absorbs stress but still follows the contours of the underlying surface.

The fabric has crucial bitumen retention properties that ensure firm adhesion between the old and the new surfacing layers. This encourages bitumen to be drawn up from the tack coat which results in a strong bond being developed between the BonarPave textile and the underlying surface.

BonarPave forms a permanent waterproof barrier that prevents water penetration into the road base from above. This protects the subsoil from water intrusion through the pavement and any subsequent reduction in bearing capacity.

Technical details

- Standard product weight 140 gr/m²
- Bitumen retention 1.17 litres/m².s
- Width up to 5.25 m
- Roll length 100 m

Functions

- Stress relief
- Interlayer barrier

Application areas

- Construction of new roads and motorways
- At the interface of carriage widening projects

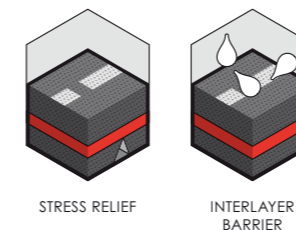
- Below new asphalt overlays in pavement maintenance works
- In repair and local patch maintenance

Features and benefits

- Minimal durability of 100 years
- High alkaline resistance
- Reduces the amount of cracking in a new pavement or asphalt overlay

- Absorbs stress but still follows the contours of the underlying surface
- Ensures firm adhesion between the old and the new surfacing layers
- Forms a permanent waterproof barrier
- Easy to install

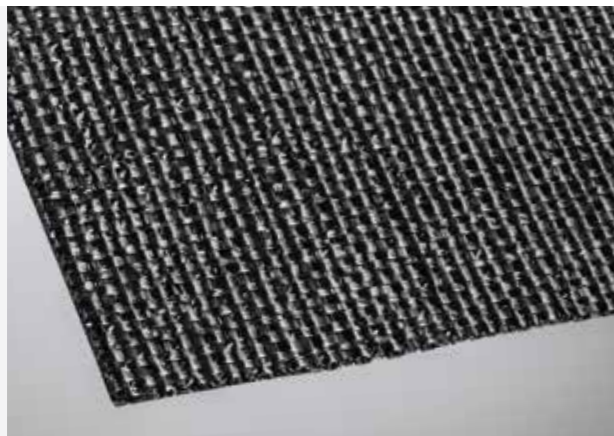
Product functions



SG

Woven geotextile for separation and reinforcement

Bontec woven geotextiles offer the perfect cost-effective solution for separation, reinforcement and filtration. Bontec woven geotextiles are manufactured from polypropylene tapes.



Functions

- Separation
- Filtration
- Reinforcement

Application areas

- Site access roads
- New roadways
- Hardstandings
- Car parks
- Industrial units
- Coastal defence projects

Features and benefits

- Durability of minimum 100 years
- Mechanical properties offer maximum strength at minimal cost
- Greater mechanical strength per unit weight compared to comparable nonwovens
- Enables water flow rates normal to the plane greater than those stipulated in the design
- Resistant to acids and alkalis at ambient temperatures
- High biological resistance
- Significant reduction of carbon footprint and costs compared to traditional methods

Bontec SG is used in areas such as access roads and hardstandings, roadways, car parks and coastal defence projects. One of its primary uses is in separation applications where there is a requirement to prevent intermixing of soft in-situ soils with good clean granular fill. A range of aperture sizes is available for Bontec SG woven geotextiles.

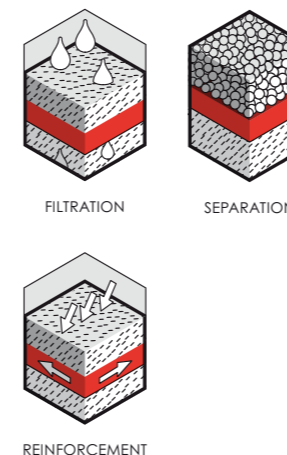
Compared to nonwovens, the Bontec SG range shows a greater mechanical strength per unit weight, providing a cost efficient and reliable solution for roads and temporary access roads.

Technical details

Bontec woven geotextiles are manufactured from highly durable polypropylene.

- Tensile strengths from 14 to 110 kN/m
- CBR puncture strengths ranging from 1.8 to 12.5 kN
- Available from stock in rolls of 5.25 m width as standard or other widths to order
- Standard roll length 100 m

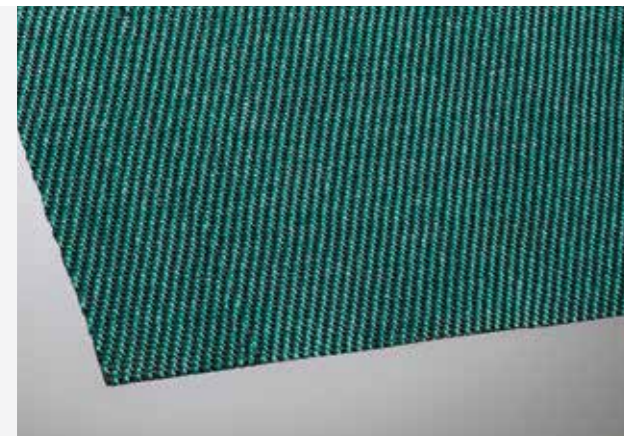
Product functions



HF

Woven geotextile for separation and filtration

HF woven geotextiles are an exclusive range of high-flow textiles with considerable mechanical strength and outstanding waterflow and pore size characteristics that will satisfy even the most demanding hydraulic applications. These products were developed for use in applications where a high permeability is critical together with a requirement for good filtration.



The HF (High Flow) range of geotextiles can be used as a filter wrap, an erosion control layer, a filter or separation layer or for load transfer. The geotextile will allow the passage of fluids without the uncontrolled passage of soil, as well as enabling the rapid removal of any excess water through its surface even in fine particle soils.

The HF range should be used where the rapid flow of water is critical and where reverse flows may be encountered. The unique characteristics of this high quality geotextile is down to its composition of polypropylene or polyethylene yarns.

Technical details

- Characteristic opening sizes ranging from 180 to 1300 microns
- Water flows up to 600 litres/m².s normal to the plane of the geotextile
- Tensile strengths up to 40 kN/m
- CBR puncture values up to 6 kN
- Available ex stock in rolls 5.25 m wide or in other widths to order
- Standard roll length 100 m

Functions

- Filtration
- Separation

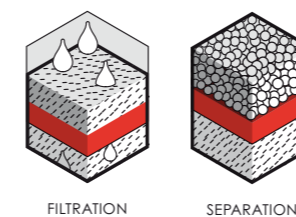
Application areas

- Granular drainage trenches and blankets
- Artificial sports surfaces, equestrian arenas
- Storm water control systems

Features and benefits

- Minimum durability of 100 years
- A fine filter mesh of uniform aperture size throughout the length and width of the product and every roll
- Reliable hydraulic characteristics to maximise long-term filtration
- Structure reduces the chances of fabric blocking and clogging
- Mechanical characteristics offer high tensile strength and puncture values
- Significant reduction of carbon footprint and costs compared to traditional methods

Product functions



We uncover the world

Project examples



Bontec SNW Many sandy beaches around the world are subjected to ongoing erosion. Locally filled geobags can protect these beaches and the nearby infrastructure.



Bontec SG In the foundation of new road constructions geotextiles are used for separation and filtration purposes to prevent granular material being mixed. This increases the lifetime of roads.



Bontec Protec Traditional rock revetments are build up from fine to coarse granules to form a natural filter. The use of geotextiles can replace up to 1 m of this natural filter, whilst preventing any possible wash-out of sand.



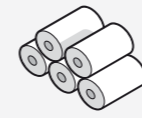
Bontec NW Geotextiles used in dyke constructions will prevent the movement of soil particles (piping). Piping is the phenomenon of soil particles being transported by seeping water, creating tubular openings under the dyke.



Bontec NW Wrapped around French drains Bontec will act as a filter layer, reducing the need for granular fill and preventing the backfill from silting up.

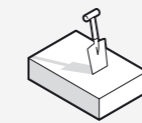
Geotextiles installation

The following information is offered in good faith to assist end users with the installation of Bontec geotextiles. As installation damage is one of the key factors that affects the integrity of the installed product, it is recommended that the following guidelines be adhered to as closely as possible.



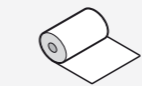
Storage advice

The product should be stacked safely in a secure location until ready for use. The protective packing should not be removed until the product is required for use. For goods delivered with no outer packing a sacrificial layer of product should be removed and disposed of. Should product then be left uncovered then temporary exposure shall not exceed the declared time in the declaration of performance of the product, acc. to the EN 12224 standard.



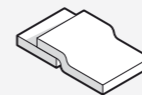
Subgrade preparation

It is possible to lay the geotextile directly on undisturbed vegetation e.g. grasses and reeds should levels so permit. Any plant vegetation such as bushes or shrubs, as well as large rocks or other similar obstacles must first be removed. All voids, wheel ruts or other deep depressions require to be either filled or leveled out to provide a smooth surface.



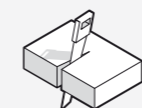
Product installation

The geotextile should be rolled out and allowed to follow the contours of the land. It should be kept as taut as possible in an effort to minimize folds but not stretched so that it spans over any hollows. Small deposits of fill material may be required across the geotextile surface to hold it in place until fill placement commences. No vehicle should traffic directly on the geotextile surface at any time.



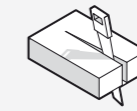
Product continuity

The simplest and quickest method of ensuring product continuity is to overlap adjacent layers. Rolls placed side by side should have a minimum overlap of 300 mm whilst length on length should have a minimum overlap of 600 mm. Over soft or uneven soils these overlaps may require to be increased. Please contact our office for further advice. Should special circumstances identify a need for a mechanical joint then further details may be obtained from our office.



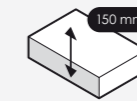
Cutting to width

Should the geotextile width have to be reduced then the product may be cut down whilst still in a roll format. Nonwoven products may be cut with a hand or power saw. This latter method will to a small degree fuse the roll end making the product slightly more difficult to unwind.



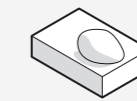
Cutting to length

Product may be cut to length using either a sharp blade or scissors.



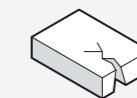
Placement of cover fill

Fill material should be end tipped at either the edge of the geotextile or on top of already placed fill before being spread to the required depth using a tracked machine. A minimum fill layer thickness over the geotextile of 150 mm is recommended prior to any trafficking or compaction.



Fill restrictions

The choice of fill placed directly on the geotextile's surface can greatly affect the amount of damage caused to it during installation. A simple piece of guidance to help minimize this damage is to use a maximum stone size no greater than half the fill layer thickness e.g. if fill is being placed and compacted in 150 mm layers then the maximum stone size should be no greater than 75 mm. This prevents any stone in direct contact with the compactor at the surface also coming into contact with the geotextile. Another option is to place a 50 mm thick sacrificial sand blanket on the geotextile prior to main fill placement.



Installation damage

Should the geotextile be damaged during fill placement then the surrounding fill material should be removed and a second geotextile layer placed over the damaged area. A minimum overlap of 1500 mm should be provided between the edge of the damaged area and the outside edge of the patch. Fill placement should then continue as before.



Disposal of waste product

A small quantity of waste is generated with each roll of geotextile product used. This can include packing, a plastic or cardboard roll center and possibly product offcuts. We would ask that you please give consideration to the environment when disposing of this material.



The Bontec product range is manufactured by Low & Bonar who is a global leader in high performance materials selling in more than 60 countries worldwide and manufacturing in Europe, North America and China. Low & Bonar designs and manufactures components which add value to, and improve the performance of, its customers' products by engineering a wide range of polymers using in-house manufacturing technologies to create yarn, fibres, geosynthetics, industrial

and coated fabrics and composite materials. These materials contribute to a more sustainable world and higher quality of life. Low & Bonar is listed on the London Stock Exchange.

The quality systems of Low & Bonar facilities have been approved to the ISO 9001 Quality Management System Standard. Certificates are available on request.

CONTACT US FOR A FREE SAMPLE KIT OR TO DISCUSS YOUR SPECIFIC REQUIREMENTS

Low & Bonar NV
Industriestraat 39 / 9240 Zele / Belgium
T +32 52 45 74 11
www.bontecgeosynthetics.com
info@bontecgeosynthetics.com

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