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## Terralys™ Geotextiles

Hy-Tex are the UK agent for the Terralys™ range of woven polypropylene tape geotextiles. These fabrics are used in ground engineering to provide separation, reinforcement, stabilisation and filtration.

Primarily used in road construction, and fully complying with the DTp Clause 609 specification, the range of fabrics offer varying characteristics to suit differing site conditions.

The Hy-Tex Terralys™ geotextile range of woven polypropylene ground engineering fabrics offer cost effective, and practical, solutions for a variety of construction and groundwork applications.

The range includes our extremely popular LF 16/16 grade, which fully complies with the Department of Transport Clause 609 specification for road/earthwork separator applications, together with high strength fabrics (Up to 90kN/m). Further grades, including high flow fabrics, are under development.

Typical projects where Terralys™ geotextiles are of benefit include: road and track foundations, railway base layers, paved areas, french drains and soakaways, coastal/erosion protection and embankment stabilisation.

From 1st October 2002 it was a mandatory requirement that geotextiles supplied to public works be "CE Marked". We are pleased to confirm that our manufacturer, Beaulieu Technical Fabrics, is fully compliant with these important European standards. (ISO 9001 Quality Assured manufacturer)

### Features/Benefits:

- Multiple grades of material
- Prevents intermixing of materials
- Reduces the amount of costly aggregate
- Efficient filtration that improves long term performance
- Increases ground stability by distributing and supporting loads
- Typical application include railways foundations, french drains, horse menages and soakaways
- Woven separation geotextile with consistent properties
- CE marked

### Guidance

- For general separation for driveways, roads, horse menages & soakaways, please see our 18/10 GF609 grade of woven separator geotextile

Application Categories: Ground Engineering

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### Why Use Woven Geotextiles?

Woven geotextiles are manufactured with controlled tensile strength, elongation and fibre distribution in both warp and weft directions, while the random fibre distribution of non-wovens can be susceptible to inconsistent properties.

Woven geotextiles have much higher strength to weight ratios, than non-woven geotextiles, and as a result far more economical to produce.

Woven geotextiles provide far greater resistance to distortion than non-wovens when placed under stress - so are better suited to high-stress absorbing applications.

Woven geotextile permeability does not vary substantially with increased loading. Non-woven fabrics often suffer from decreased permeability as vertical loads increase.

The construction techniques used in woven geotextiles allow textile engineers complete control over all technical characteristics - giving them the opportunity to maximise economy and produce the "ideal" geotextile for any given situation.

### Woven Construction

Woven fabrics are made with a high degree of control, weaving together a set number of warp and weft fibres to a defined pattern. This provides even fibre distribution and uniform pore sizes and spacing.

### Non-Woven Construction

Non-woven heat bonded, and needle-punched, fabrics have randomly orientated fibres, Therefore, the overall distribution of fibres vulnerable to irregularities and consequently the gaps between them can vary.

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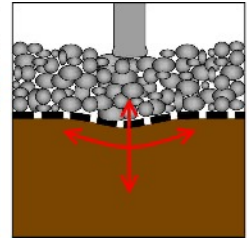
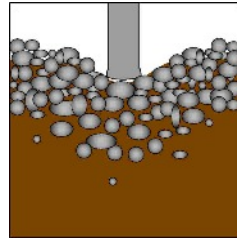
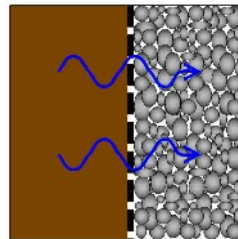
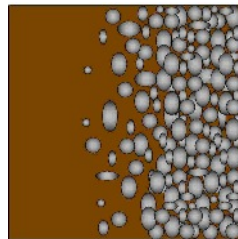
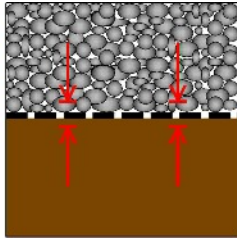
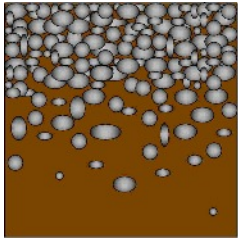
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## Separation

Using Hy-Tex Terralys™ woven geotextiles prevents intermixing of materials with different grades or structure.

This improves compaction and load bearing capacity, whilst ensuring long term drainage performance.

It also minimises the need for ground excavation, enables work to proceed during adverse weather, reduces the amount of costly aggregate and extends the effective life of the construction.

## Filtration

Using Hy-Tex Terralys™ woven geotextiles permits free flow of water whilst retaining fines (sand/silt).

This prevents build up of hydraulic pressure, ensures the drainage medium remains unclogged, and provides efficient long term performance and low maintenance.

Furthermore, it also allows less expensive aggregate to be used.

## Reinforcement

Using Hy-Tex Terralys™ woven geotextiles increases ground stability by distributing and supporting loads.

The high tensile strengths of these woven geotextiles, combined with their frictional resistance, restrain ground movement and deformation from imposed loads, whilst spreading localised stresses from individual stones.

This permits alternative designs and provides cost effective solutions.

## Highways, Roads and Temporary Tracks

Hy-Tex Terralys™ geotextiles offer a cost effective solution for a variety of asphalt, paved and granular vehicle ways.

Using a geotextile reduces the amount of costly foundation aggregate materials, whilst also improving load bearing capacity, stability and drainage. Consequently, life span is increased, maintenance reduced and access allowed over weak ground normally unsuited to vehicles.

### Separation

Hy-Tex Terralys™ geotextiles control subsidence by preventing the hardcore foundation from mixing with underlying softer ground, and hindering pumping of fine particles into the opener aggregate.

The fabrics also significantly improve the effectiveness of vibro-compaction by restricting movement of the coarse top stone during the consolidating process and behaving like a drum skin. This results in better strength at the lowest road layers because they are more tightly compacted.

### Filtration

Hy-Tex Terralys™ geotextiles aid quick and reliable drainage of the sub-base. The permeable fabrics allow free flow of water, whilst filtering out fine particles which would clog the aggregate layer. This prevents build-up of hydraulic pressure and ensures long term drainage performance.

### Reinforcement

The high tensile strength, combined with the frictional resistance, of the woven geotextiles provide support to vehicles, distributing loads over a wider area, reducing ground stresses and controlling rutting.

## Fully Compliant

The extremely popular Hy-Tex Terralys™ LF 16/16 is fully compliant with the Department of Transport Clause 609 specification requirements, and is recommended for general earthwork and road-base separation applications.

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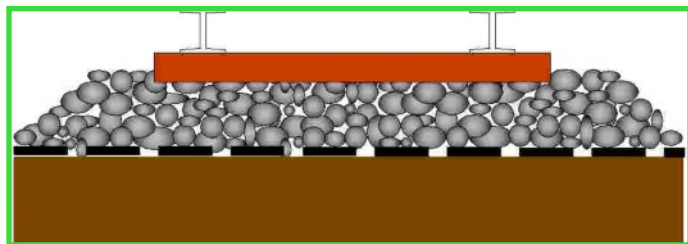
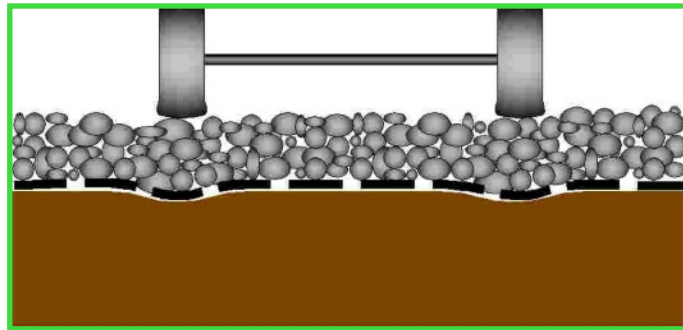
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## Typical Applications

### Unpaved Roads & Drives Farm Tracks & Gateways Temporary Site Accesses

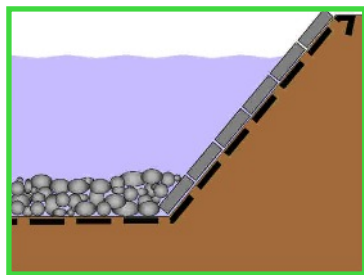
Hy-Tex Terralys™ geotextiles keep the sub-base clean, free-draining and therefore dry and strong as frictional resistance is unaffected.

Because the fabrics prevent the stone from mixing with softer ground beneath, less aggregate is required and maintenance is significantly reduced.



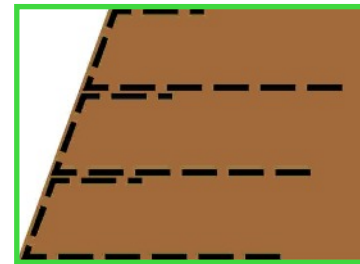
### Railway Foundations

Hy-Tex Terralys™ geotextiles prevent sub-base fines from being pumped into the ballast by the rhythmic passage of trains. The special tightly woven high strength fabric also keeps the sub-base dry, by encouraging rain to run-off to the track side, ensuring permanent load bearing capacity.



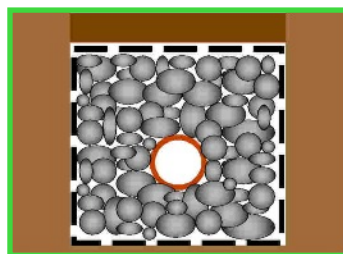
### French & Rubble Drains Soakaways

Hy-Tex Terralys™ geotextiles prevent the drainage stone from intermixing with surrounding soil, filter out fines and improve drainage efficiency.



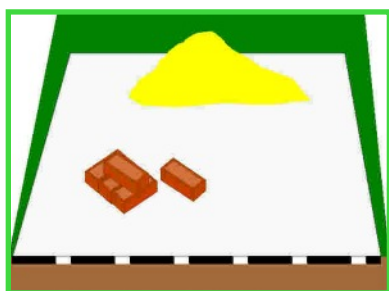
### Coastal Erosion Control River Bank Protection

Hy-Tex Terralys™ geotextiles allow water flow in both directions whilst preventing loss of fines. The fabrics also support the protective revetment.



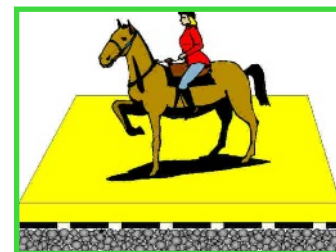
### Embankment Stabilisation Temporary Retaining Walls

Hy-Tex Terralys™ geotextiles can be used as soil retaining envelopes on steep slopes and to reduce earth pressures behind retain walls.



### Brick & Slab Paved Areas

Hy-Tex Terralys™ geotextiles prevent loss of sand from the bedding layer ensuring a level and stable surface.



### Temporary Storage Areas

Hy-Tex Terralys™ geotextiles can be used to protect lawns from damage during temporary storage of building materials.

### Horse Menages & Bridleways

Hy-Tex Terralys™ geotextiles ensure sand is kept clean and free draining, and prevents intermixing with the aggregate.

Other applications for Hy-Tex Terralys™ geotextiles include: puncture resistant protection for impermeable liners, blockage prevention for retaining wall weep holes and much more ...

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## What are the Requirements for General Road and Earthwork Separator Geotextiles?

Comparing different brands of geotextile can be confusing as specifications vary considerably. However, fortunately, for road, and earthwork, separator applications, the Department of Transport (DTp) has defined specific requirements that must be met. These are known as the "Clause 609 Specification", and a brief explanation of the features, together with other characteristics to be considered, is given below:

### Clause 609 Requirements

- **BETWEEN**  
**100 and 300 micron ( $\mu$ )**
- **GREATER THAN**  
**10 litres/m<sup>2</sup>/sec**

### Geotextile Property

**PORE SIZE ( $0_{90}$ )** is a measurement of the average size of holes in a geotextile. A low figure means the fabric is better at preventing fine soil particles from being carried out of the base soil.

**PERMEABILITY** measures the rate at which water can pass through the geotextile. Much will depend on site conditions, but very high flow rates are generally not important for separator applications.

**TENSILE STRENGTH** measures the load bearing capacity of a geotextile. The stronger the fabric the better the reinforcement and stabilisation properties. No minimum strength is quoted by the DTp, but the weakest separator fabric commonly used is 8 kN/m in both directions, although some councils now stipulate a minimum 10 kN/m strength.

**PUNCTURE RESISTANCE (CBR)** measures the push through resistance of a fabric. This is less important for general separator projects, but should be considered where soil is weak, or aggregate poorly graded.

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## Further Information

**Beaulieu Technical Textiles** Through substantial investment since 1988, Beaulieu Technical Textiles (Formerly known as Lys-Fabrics) have constructed the most sophisticated and modern weaving plant in Europe.

Full production integration (extrusion, beaming, weaving, coating and cutting), combined with the latest technology and permanent quality control (to ISO 9001), ensure that Beaulieu Technical Textiles products are of the highest standard.

With annual output now at 170 million square metres, and a continued commitment to research and development, Beaulieu Technical Textiles have become market leaders in the polyolefin wovens sector.

Beaulieu Technical Textiles are part of the highly respected Ideal Group - a family owned group of companies that manufacture an extensive range of fabrics for technical, carpet and automotive applications worldwide.

Feature	Hy-Tex Terralys™ LF 29/29
Material:	Black, woven, polypropylene split tape, DTP Clause 609 compliant, separator geotextile
Tensile Strength MD / CMD:	29.0 / 29.0 kN/m [EN ISO 10319] Tolerance -4.00
Elongation MD / CMD:	14.0 / 14.0 % [EN ISO 10319] Tolerance +4.0
Dynamic Perforation Resistance:	11 mm [EN ISO 13433] Tolerance +2
Resistance to Static Puncture:	3.70 kN [EN ISO 12236] Tolerance -0.70
Opening Size:	370 µm [EN ISO 12956] Tolerance +125
Water Permeability (Normal to the Plane):	48 10 <sup>-3</sup> m/s [EN ISO 11058] Tolerance -14
Mass per unit area* *Not mandated characteristics for CE-marking	134 g/m <sup>2</sup> [EN ISO 9864] Tolerance +13
Weight:	87 g/m <sup>2</sup>
Roll Sizes:	2.57m x 100.00m 5.15m x 100.00m

The above information is not to be taken as a warranty, or representation for which we assume legal responsibility. It is offered for your consideration, investigation and verification, and shall form no part of any contract with a customer.

md = machine direction (Warp) cd = cross direction (weft)



**1137-CPR-0613/29**

### Other Grades Available Include

**LF 35/35 - LF 46/46 - LF 57/57 - LF 68/68 - LF 90/90 - LF 100/100**

Full specifications on request.

**FULLY COMPLIANT WITH MANDATORY CE MARK REQUIREMENTS FOR PUBLIC WORKS**

Non-Woven Fabrics available on request.

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