

# Hy-Tex Terrastop™ Silt Fences for Stormwater Run-Off Control

Hy-Tex Terrastop silt fence in use on National Grid's Milford Haven to Aberdulais gas pipeline project



Hy-Tex Terrastop silt fence in use on National Grid's Felindre to Brecon gas pipeline project



**News:** Terrastop HighFlow trapped approx. 5 tonnes of silt per 10m fence run over 1 month on potato field trials in Scotland

**Terrastop™ Premium (GR180)**



1137-CPR-0613/29

**Sand bags in both grades also available for no-dig solutions. Call for further details**

Many construction, forestry and farming activities result in disturbed or bare ground that is vulnerable to weather erosion. The silt laden run-off, plus site debris and other pollutants, often contaminates surrounding land, watercourses, lakes and drains - resulting in significant environmental diffuse pollution and potentially costly fines.

However, due to the on-going nature of such work, it is generally not possible to protect exposed surfaces until the project is complete. So stormwater from such sites represents a major non-point source of diffuse water pollution in the UK.

**Solution:** Hy-Tex *Terrastop™ Premium*, and *HighFlow* silt fences, offer a proven, practical, economic and effective method to reduce stormwater run-off pollution from such locations. They are special, high quality, permeable, technical filter fabrics, that can be installed as an entrenched vertical barrier fence, and are designed to intercept and detain run-off - trapping harmful silt through settlement and filtration before it leaves the site.

**Performance:** The benefits of silt fences are increasingly becoming recognised in Britain: The Environment Agency/SEPA Pollution Prevention Guidelines (PPG5) now recommend the use of silt fences to reduce silt transport from exposed ground and stock piles; and research at The James Hutton Institute, with *Terrastop Mono 60* silt fencing, showed that even after post-harvest contour grubbing of potato fields roughly 80 tonnes of soil containing 60-70 kg phosphate-P contaminants was trapped from a 17ha field [[Dr Andy Vinten](#)].

While in other countries where silt fences have been used extensively for many years, their proven performance (Intercepting up to 86% of suspended solids [Horner et al. 1990]) has made them a standard *Best Management Practice* on a diverse range of projects. From this in-depth research, and practical experience, Hy-Tex *Terrastop™ Premium* and *HighFlow* were developed to exceed the highest standards, with many unique features for ease of use, reliability and effective results.

**Key Features:** General purpose non-woven and woven geotextiles are unsuitable for silt fence use as they clog, overtop and inadequately filter sediment due to poor hydraulic properties (typically less than 10 l/m<sup>2</sup>/sec) and often fail: tearing and fraying (as they are too weak to withstand the forces of stormwater/silt build-up without costly additional wire support fences) or becoming brittle quickly (due to lack of UV protection). *Terrastop™ Premium* and *HighFlow* are manufactured specifically as silt fences so have high tensile and burst strengths, premium UV stabilisation, woven structures with tear resistant non-fraying reinforced edges, that are durable and self supporting between fixing posts for reliability, as well as having a visually pleasing subtle green colour.

The CE Mark certified *Terrastop Premium* also has an special fibrous weft yarn, combined with a high quality weave, to enhance filtration, maintain flow and minimise clogging.

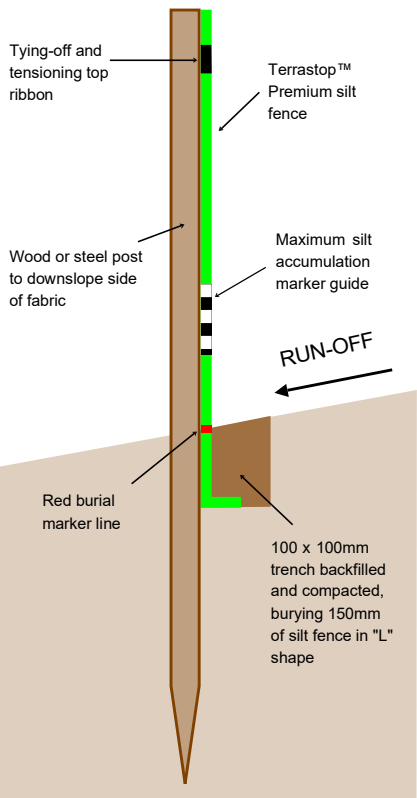
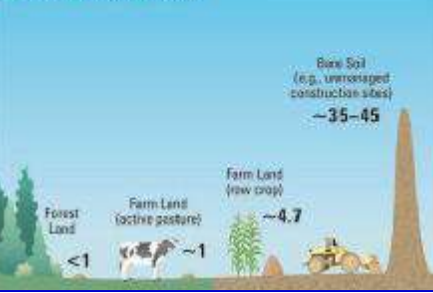
**Installation Aids:** Silt fences also often fail through poor installation or aftercare, therefore *Terrastop™ Premium* incorporates pre-marked lines for burial depth and maximum silt accumulation level to ensure correct set-up and maintenance; as well as a top ribbon strip to simplify post attachment and tensioning.

Kirsty Liddon's Edinburgh University Dissertation "Prevention of Diffuse Pollution from Active Forestry Harvesting Sites:" concluded "the Hy-Tex [Terrastop Premium] material appears to be the most suitable material for use as sediment retention as it has the most consistent performance between differing soil types retaining the highest volumes of sediment for both gley and peat solutions."

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## Typical erosion rates for land-based activities

(soil loss from various land areas, in tons per acre per year)



## The Problem

- Construction activities disturb or expose vulnerable soil
- Erosion up to 150 times greater than before works
- Sediment run-off typically 10 times greater than agricultural lands
- 2.5 cm of rainfall per hour produces 25,000 litres of water for every 1,000m<sup>2</sup> of land
- Silt laden storm water run-off contaminates surrounding land, roadways, watercourses, lakes and drainage systems
- In a short period more sediment may be deposited in waterways than would normally accumulate over several decades
- Increased public spending on maintenance of drainage systems, waterways and reservoirs
- Serious environmental harm to aquatic habitats

## The Solution

Purpose made, properly installed and well maintained silt fences can remove\*:

70% of average total suspended solids

80 to 90% of sand

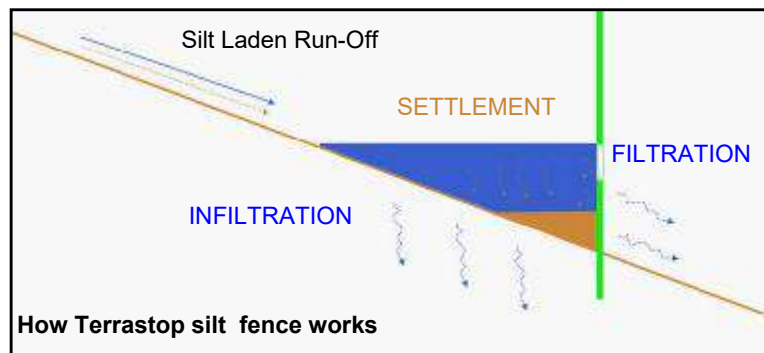
50 to 80% of silt-loam

0 to 20% of silt-clay-loam

\*United States Environmental Protection Agency

## Key Requirements

- High tensile strength (Minimum 20kN/m), UV stabilised, woven structure
- Tear resistant non-fraying reinforced edges
- Self supporting between fixing posts
- Special weave to enhance filtration, maintain high flow rates (Minimum 20 l/m<sup>2</sup>.sec) and be less prone to clogging
- Ideal exposed fence height of 0.60m (Higher fences often fail due to excess wind and run-off loading) or 1.00m for high flow fences (Greater than 100 l/m<sup>2</sup>.sec)
- Visually pleasing subtle green colour



Specification	Terrastop™ Premium (Terrasilt GR180)	Terrastop™ HighFlow
Tensile Strength	22kN/m	32kN/m
Puncture Resistance (CBR)	3,500N	3,700N
Permeability (ISO 11058)	21 l/m <sup>2</sup> .s (45 l/m <sup>2</sup> .s to AS 3706.9)	190 l/m <sup>2</sup> .s
Opening Size (ISO 11058)	180µm	320µm
Weight	200g/m <sup>2</sup>	145g/m <sup>2</sup>
Material	1000µ thick, green/black, 400kLy UV stabilised, polypropylene, tear resistant non-fraying edges.	500µ thick, green/black, 450kLy UV stabilised, polyethylene, tear resistant non-fraying edges.
Roll Size	0.75 x 100m	1.00 x 100m
Other Key Features:	Fibrous weft yarn, burial depth and max silt height marker lines, top tying-off + tensioning ribbon.	

"Basic" grade also available for less stringent applications