

# **DRAINTUBE**

*Enhanced Gas Collection Blanket*



**Landfill Gas  
Management solutions**



Geocomposite  
drainage solutions  
you can count on

afitexinov

Afitexinov specializes in drainage geocomposites for over 25 years and is considered a leader in this field in Europe.

Texel

Texel, founded in 1967, is now manufacturing a large range of non-woven materials, including very high quality geosynthetics, and is recognized as a leader in North America.

afitexTexel

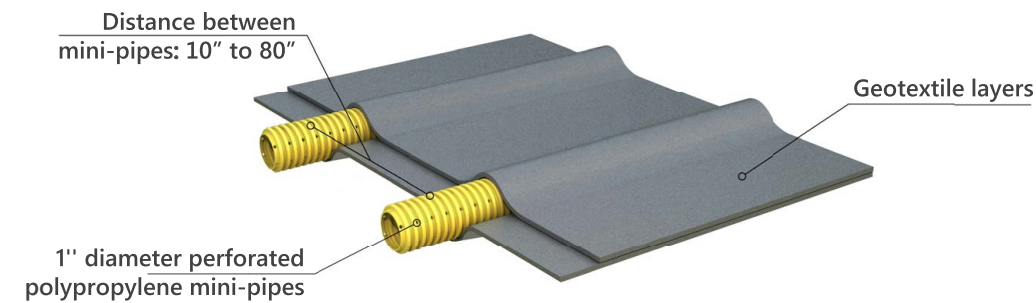
The experience and expertise of both Afitec and Texel stand for excellence in designing, developing, manufacturing and marketing high quality specialized synthetic materials, such as DRAINTUBE®.

DRAINTUBE® combines standard pipe and geotextile technology into a unique package offering superior long term drainage capacity and performance.

DRAINTUBE® standard roll size is 3,200 sf (13.1' x 246') and can cover over 30% more area than other geocomposites. DRAINTUBE® is installed like traditional geotextiles, and DRAINTUBES's panels can be easily sewn or thermally fused.

In addition, DRAINTUBE's installation is fast and headache-free because DRAINTUBE® has no plastic nets to tie together, and the material at the end of a DRAINTUBE® roll lays flat unlike traditional geocomposites.

Our Lympha design software and our talented professionals are available to help make your project a success from concept to completion.



## During operation Horizontal LFG collection within the waste mass

Landfill gas (LFG) needs to be effectively extracted from active landfills to comply with air regulations and reach the 75% lifetime gas capture rate recommended for MSW landfills.

Placed directly within the waste mass, **DRAINTUBE® GAS Plus** replaces traditional horizontal LFG trenches.

**DRAINTUBE® GAS Plus** is unrolled directly on the waste and connected to the LFG system conveyance piping using Quick Connect System.



## During operation Temporary cap with LFG collection

Temporary caps are used on open landfill cells to limit rainfall infiltration into the waste and prevent gas from escaping the sides of the landfill.

Installed directly under the geomembrane, **DRAINTUBE® GAS** collects the gas and controls the LFG pressure build-up. In addition, DRAINTUBE® can be connected into an LFG system conveyance piping using Quick Connect System.

Flexible and easy to install, **DRAINTUBE® GAS** provides a dense mini-pipe network able to solve any LFG surface emission concerns.



To further limit air intrusion into the gas network, DRAINTUBE® geocomposite can be manufactured with an associated coated woven polyethylene geomembrane on its upper side.

## Closure LFG drainage within the final cover system

The final cover system must include a gas venting layer to provide a conduit for LFG to travel to gas wells. **DRAINTUBE® GAS Plus** improves the collection rate, limits the gas pressure under the geomembrane, and protects it from unexpected mechanical damages.

**DRAINTUBE® GAS Plus** can be connected to the LFG network through a regular collector trench or directly to a manifold using Quick Connect System.



## Quick Connect System Gas fittings



The DRAINTUBE® mini-pipes can be positively connected to interceptor drains without trenches with the Quick Connect System.

Quick Connect System creates an airtight connection between the gas piping network and DRAINTUBE®.





# Design considerations

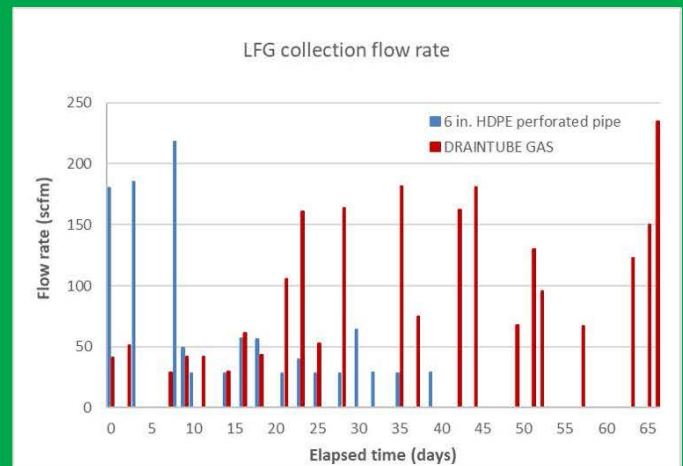
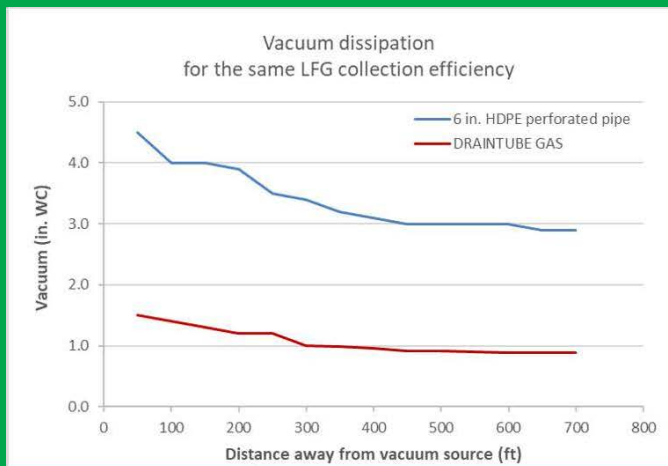
## Long term behavior

DRAINTUBE® offers better long-term performance than any other drainage geocomposite. DRAINTUBE's superior performance is because DRAINTUBE's flow capacity remains the same even under high loads (tests carried out under a normal load up to 50,000 psf). DRAINTUBE's unaffected flow capacity leads to a higher safety factor on performance design.

DRAINTUBE's improved long-term performance is achieved through soil arching over the pipes when confined. In addition, the structure of DRAINTUBE® is not susceptible to geotextile intrusion, which has been shown to reduce flow in standard geocomposites. Eliminating geotextile intrusion increases options for the types of geotextiles to be used in the geocomposite.

## Head loss calculation

Thanks to Lympha software, the DRAINTUBE® collection flow rate can be determined for each project function of the type of gas, the applied vacuum and the length of drainage.



*Comparative studies of LFG collector designs, Cedar Hills Regional Landfill WA, 2016*

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