

PROJECT CASE

Leachate Drainage at Bottom and Slopes of Municipality Landfill of Zahleh (Lebanon)

Date
September 2018

Surface Area
17 000 m²

Product(s)
DRAINTUBE 400 FT1 D20

Company
Simon Elkaai Enterprise

Project Owner
Municipalité de Zahlé

Project Management
Mores Consultancy

Description of The Project

The Zahleh Municipality Landfill and recycling plant center is located in the Bekaa Valley, 60 km east of Beirut. It collects municipality waste from several towns in the valley (500 tonnes processed per day).

As an alternative to the traditional Drainage and waterproofing solution (granular or geonet) ; DRAINTUBE drainage geocomposite was proposed at the bottom and side of the cell.



Installation of geomembrane (PEHD) on slopes and bottom of the cell

Solution(s)

For this application, the first function of the DRAINTUBE FT is to drain the leachate from the bottom and slopes of the cell. A specific dimensioning was carried out in order to take into account all the parameters inherent to the site (geometry, height of waste, etc.). Its second function is the mechanical protection of the waterproofing Geomembrane seal, with mechanical characteristics meeting the requirements of the project.



Installation of DRAINTUBE FT on geomembrane

Description and function of the product(s)

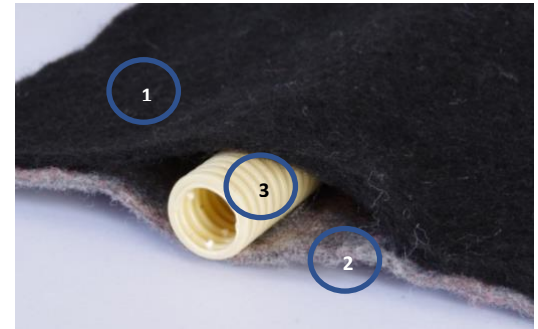
The DRAINTUBE FT drainage geocomposite is made up of :

- non-woven needled filter mat (1)
- non-woven needled drainage layer (2)
- Corrugated and perforated polypropylene mini-drains - diameter 25 mm with regular perforations along 2 alternating axes at 90deg to each other.

The components are associated with each other by needle punching.

Implementation

Once the waterproofing HDPE geomembrane was installed, the DRAINTUBE geocomposite was installed on the bottom and sides of the cell, on top of the Geomembrane and perpendicular to the collector drain. Like the geomembrane, it is anchored at the crest of the slope. The leachate was evacuated to a sump and a pump system was installed to evacuate the leachate to the recovery Leachate evaporation



Anchor Trench



Unrolling of DRAINTUBE rolls on the
Geomembrane



Bottom of the Cell

Overview of the Cell



Avantages of the Proposed Solution

This solution allows:

- Optimization of leachate collection in the cells
- High drainage capacity under heavy stress/loads
- Reduction of the hydraulic load on the geomembrane
- Protection of the geomembrane against puncturing
- Product easy to unroll and install
- Economical and beneficial solution for the environment thanks to the replacement of granular materials

CONTACT

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