

GEOCOMPOSITE DRAINS IN LANDFILLS – AT A GLANCE

PROBLEM

Drainage aggregates are voluminous materials which require huge amounts of material to shape conventional drainage layers. When applied to landfill systems, traditional designs are inherently affected by:

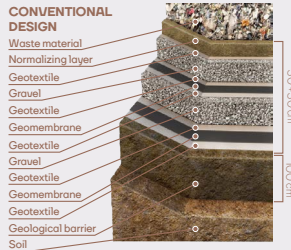
1. Increase of loads on the waste
2. Reduction of waste capacity

Is there any solution able to minimize these constraints while keeping constant/improving performance?

COVERS AND CLOSURES



NEW CELLS



To drain 10.000m²

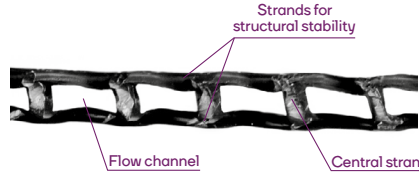


4 FUNCTIONS IN
1 PRODUCT

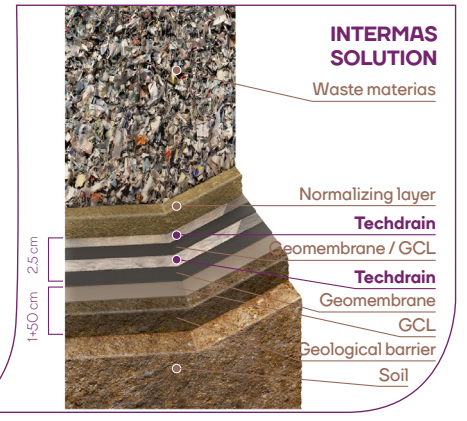


SOLUTION

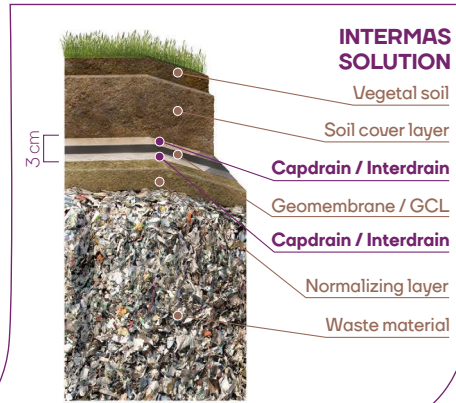
TECHDRAIN Tri-planar geocomposite drains are specifically designed to convey fluids under very high compressive loads sustained throughout the life cycle. In landfill systems, these materials are commonly employed for primary or secondary leachate drainage. Under similar high-pressure conditions, TECHDRAIN geocomposites can drain up to 20 times more leachate than a traditional 50-cm thick layer of aggregates.



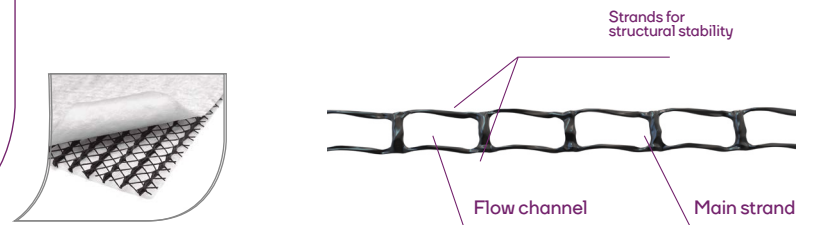
NEW CELLS LARGER LANDFILL CAPACITIES



CAPPING REDUCTION OF THE LOADS ON THE WASTE



CAPDRAIN Lightweight tri-planar geocomposite drains are specifically designed to convey fluids under very low gradients and sustain the loads applied throughout the life cycle. In landfill systems, these materials are commonly employed for rainwater drainage or gas venting. Under similar conditions, geocomposites can drain up to 40 times more rainwater than a traditional 50-cm thick layer of aggregates.



NEW CELLS - Intermas



Indaver Landfill (Belgium) – 40.000 m² TECHDRAIN



Ballealy Landfill (Ireland) – 200.000 m² TECHDRAIN

COVERS AND CLOSURES - Intermas



Hyderabad Landfill (India) – 550.000 m² CAPDRAIN



Valmadrid Landfill (Spain) – 433.000 m² CAPDRAIN

TECHNICAL SUPPORT

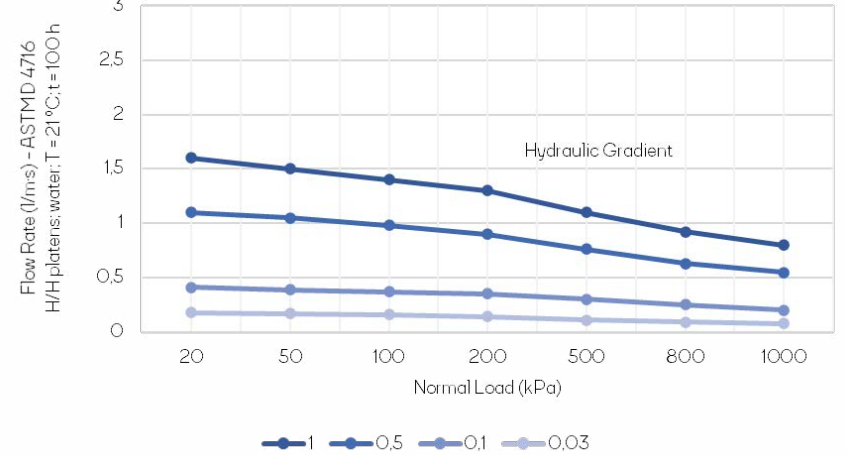
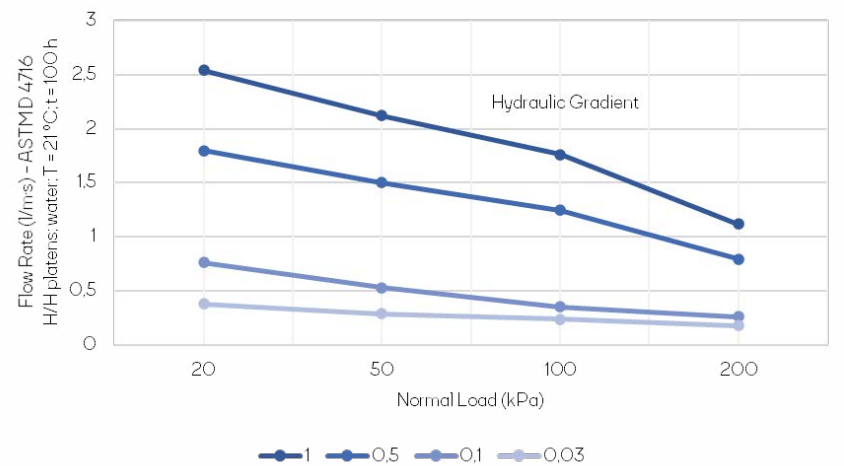
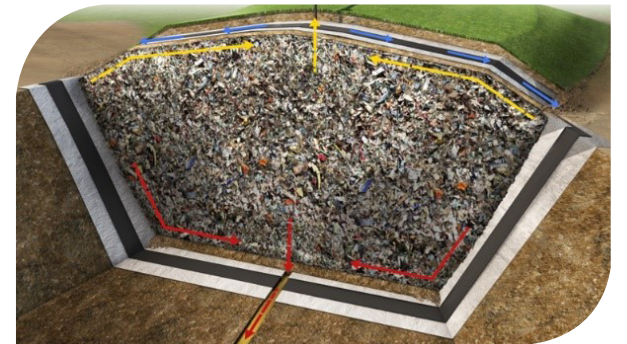
The short-term transmissivity value is obtained according to the test method ASTM D 4716 under site-specific conditions of normal load, hydraulic gradient, boundaries, seating or loading time and the permeating fluid and its temperature. All these variables greatly influence the final performance of the geocomposite drain, and therefore must be explicitly stated in every technical document.

It must be noted that the datasheet values commonly refer to the short-term transmissivity behavior and, according to GRI-GC8 guide, these are contingent on a series of reduction factors to account for the long-term performance:

$$q_{allow} = q_{100} \left[\frac{1}{RF_{CR} \times RF_{CC} \times RF_{BC} \times RF_{GI}} \right]$$

where:

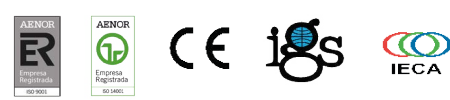
- q_{allow} = allowable flow rate for a drainage geocomposite
- q_{100} = initial flow rate determined under simulated conditions for 100-h duration (ASTM D 4716)
- RF_{CR} = reduction factor for creep
- RF_{CC} = reduction factor for chemical clogging
- RF_{BC} = reduction factor for biological clogging
- RF_{GI} = reduction factor for geotextile intrusion (= 1.0 under real on-site boundaries)



Get in touch with us and find out all the benefits that Interma's Geocomposite Drains can contribute to your project.



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