



Pozidrain

A guide to the selection and specification of ABG Pozidrain high performance drainage geocomposite

Pozidrain

Pozidrain is the original wide width preformed drainage and gas venting layer. It is the sustainable and environmental alternative to filter stone. It consists a high strength flexible polyethylene cusped core with a nonwoven geotextile bonded onto either one or both sides.

The polypropylene geotextile will filter a wide range of materials and is bonded to the core to ensure that it does not deform into the drainage passages under the action of backfill material. The geotextile allows water (or gas) to percolate into the core whilst supporting the backfill material. The collected water (or gas) is transported along the core to a discharge point.

The single cusped HDPE core acts as a high performance drainage medium, with the spacing between the dimples designed to ensure an excellent support for the geotextile filter. Optimum compressive strength and resistance to creep ensure that the core will maintain its drainage capability under a wide variety of compressive loadings. The unique core design has clear passageways to allow flow in all directions.

Pozidrain is durable and sufficiently robust to resist the mechanical stresses imposed during installation and throughout the design life. Use of Pozidrain will eliminate the need for secondary protection of the geomembrane liners. Thick Terrex geotextile may be used in the manufacture of Pozidrain to create a very substantial protection and drainage layer with just one installation cost.



Applications

A strong, robust drainage layer for collecting leachate or ground water in landfill containments. Drainage layer between soil cover and geomembrane of a landfill cap. A system of venting methane and other gases from the perimeter of landfills and below the capping layer. Leakage detection layer within the landfill base lining. Cut-off trenches. Embankment drainage and reinforcement. Capillary break layer in the restoration of contaminated land.

Compared with mineral drainage layers, Pozidrain geocomposites are much thinner while having superior flow capacity. This reduces the required thickness of the capping and base lining system, which results in extra landfill space and considerable savings.

The wide width Pozidrain composites are especially suited for rapid installation on large landfill and restoration projects.

Chemical resistance

Pozidrain has excellent resistance to petrol, oils, acid, alkalis, leachate and all common chemicals.

Supply

Pozidrain is available in 4.4 or 1.1 metre wide rolls, 50 or 100 metre in length, manufactured in 4mm, 6mm, 7mm, 12mm & 25mm thickness and a wide range of compressive strengths. Pozidrain G with lattice drainage core is available in 4mm, 6mm or 7mm thickness

Our flexible manufacturing enables production of site specific products.

Benefits

- Sustainable recycled resource.
- Creates more landfill volume.
- Allows use of lower specification backfill materials.
- Reduced excavation and backfill.
- Technically defined filter properties and extremely high impact and crush strength.
- Long life performance and high flow capacity.
- Compatible with geomembrane systems. Acts as the protection layer to geomembrane liners.
- Ease and speed of installation.
- Massively reduced traffic volumes compared to drainage stone.

Installation

Pozidrain is easy to handle and is rapidly installed without the need for specialist plant. The 4.4m wide rolls are ideal for coverage of large areas.

Health, Safety & Environment

All components of Pozidrain are inert and do not present a health hazard.



Waste Management Applications

Landfill Capping

To guarantee an effective cover the landfill cap should incorporate a drainage layer above and a gas collection layer below the cap lining system. Pozidrain will provide these functions with higher performance and lower cost than conventional crushed stone filters.

Pozidrain has been specially designed to be compatible with both HDPE and clay liners and to give the optimum performance over the whole life of the landfill capping. Pozidrain will enhance the performance of the GCL or HDPE liners by providing an additional barrier that prevents the majority of the water or gas reaching the liner. Pozidrain geocomposite drainage layer has a proven record in landfill capping.

Landfill Cap Drainage

Pozidrain installed over a geomembrane, within the geosynthetic landfill cap, will collect and drain rain



water from the soil cover. This will prevent saturation and ensure the capping soil remains stable.

Gas collection & dispersal

Pozidrain below the landfill cap geomembrane will form the basis of a very efficient gas collection and dispersal system.

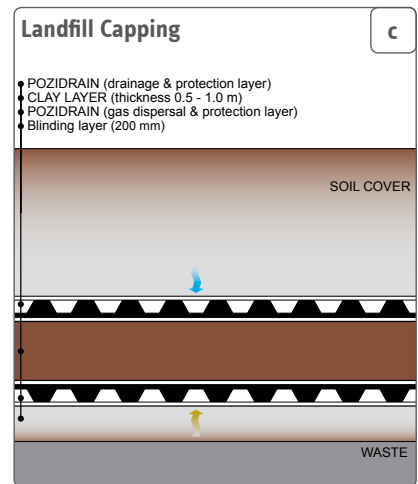
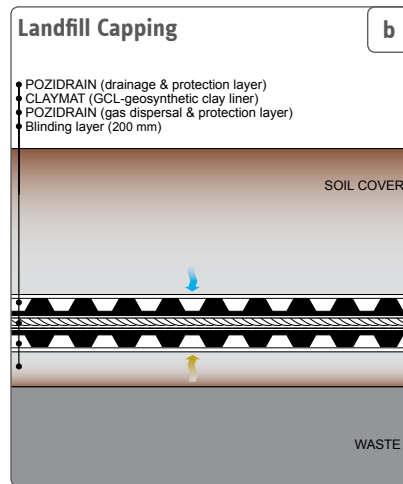
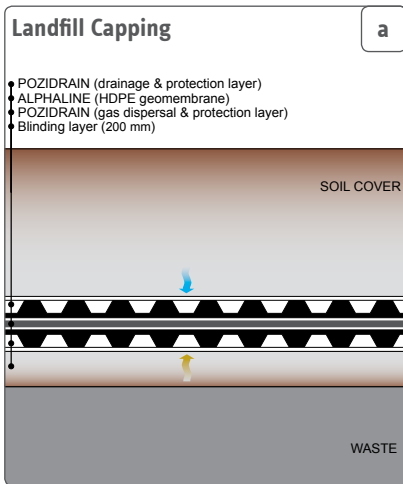
Installed with the flat face of the core against the liner and dimpled face against the waste, Pozidrain will also

provide a high level of protection to the lining system.

Geomembrane protection

Pozidrain has a smooth flat core that has the optimum design to reduce the contact stress on the geomembrane.

The high CBR puncture resistance of Pozidrain cushions the geomembrane from sharp material in the landfill waste. Site specific protection efficiency tests are readily undertaken.



Waste Management Applications

Landfill Base Lining

The wide width, Pozidrain Protector geocomposite drainage layer has major advantages over conventional drainage stone. It creates more landfill volume and has hydraulic properties designed for reliable and sustainable performance. For basal applications high strength cores are used. The mechanical resistance of the material is more than sufficient to endure installation and long term loading. Pozidrain reduces the hydraulic head and physical stress on the geomembrane (as demonstrated by the cylinder test EN13719:2002) and provides protection against puncture. A significant number of landfill sites have already utilised the benefits of Pozidrain.

Leakage Detection

Leakdrain installed between a primary and secondary geomembrane forms the basis of an efficient leakage detection system. Leakdrain will not only identify the presence of a leak but



also has sufficient capacity to collect the discharge and guide it safely to a collection point until repairs can be made.

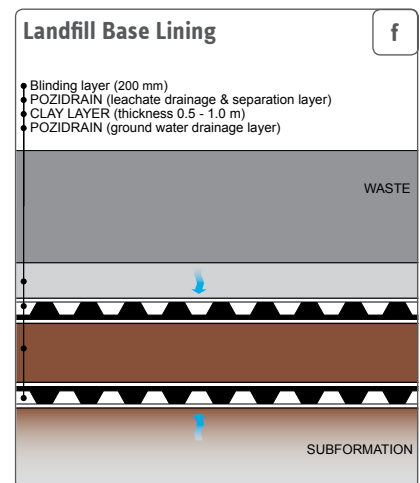
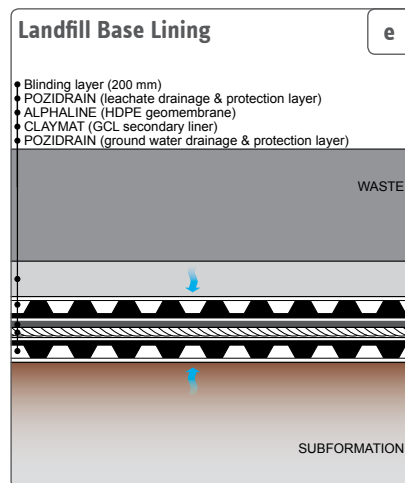
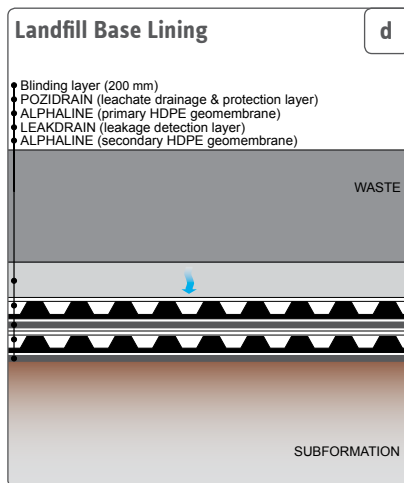
Leachate Drainage

Pozidrain installed over a geomembrane, within the geosynthetic landfill base, will collect and drain leachate from the waste body above. The large voids within the Pozidrain core provide high resistance to biological clogging. As with conventional materials

a 200mm blinding layer is typically provided above the Pozidrain.

Groundwater Drainage

Pozidrain below the landfill base geomembrane will act as a ground water drainage system. Installed with the dimpled drainage face against the sub formation and the flat face on which to lay the geomembrane liner uppermost, Pozidrain will provide a high level of protection to the lining system.



Environmental Protection

Land Reclamation & Highways

The wide width Finesse Pozidrain geocomposites are often used in soil stabilisation applications. High tensile strength and flow capacity ensure excellent reinforcement and separation. Pozidrain provides a more environmentally acceptable solution than crushed stone drainage layers. It is lighter, uses less transport and helps conserve finite natural resources. Due to its high drainage properties Pozidrain often enables low grade recycled material to be used as backfill.

Environmental Protection

Pozidrain installed over contaminated soil will collect and drain rain water from the clean soil cover above. It will provide separation and reinforcement for the backfill material. Pozidrain will perform as a capillary break to prevent contaminated water seeping up from below. If required it can be supplied with



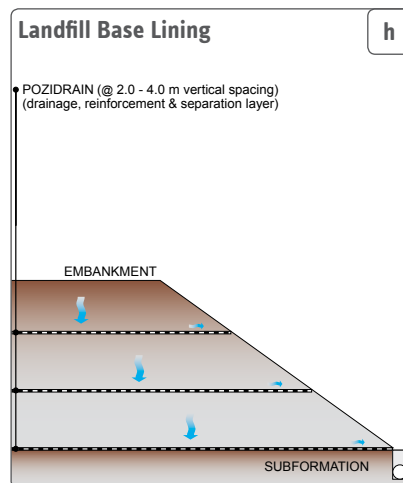
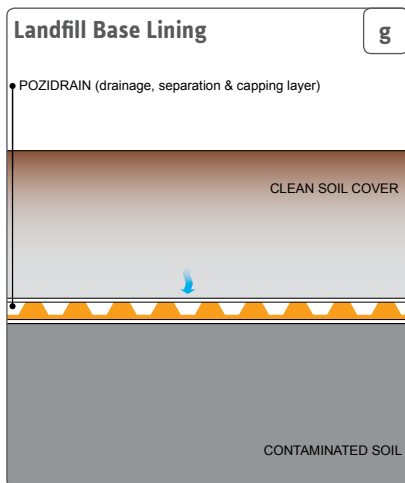
core in the orange colour to act as an indicator layer.

Embankment drainage & stabilisation

The use of Pozidrain drainage layers in embankment stabilisation provides both drainage and reinforcement. It is the most effective solution that produces the greatest increase in soil strength and speeds consolidation.

Slope stabilisation

Pozidrain is used conveniently to stabilise the face of embankments or cuttings where ground water seepage is washing away material from the face. Pozidrain laid along the face of the slope enables low grade excavated material to be used to re-profile the slope..



Associated materials

ABG manufacture a range of geosynthetic materials to help solve associated problems. When contemplating the many aspects of landfill and environmental projects the following products may enhance your overall design:

- Alphaline** Polyethylene and polypropylene geomembranes
- Claymat** Geosynthetic clay liners
- Terrex** Woven geotextiles for separation, protection and filtration
- Erosamat** Erosion control mats to stabilise exposed soil areas
- Erosaweb** Honeycomb web for slope stabilisation and access roads
- Webwall** Environmental soil retaining walls

About ABG

ABG is a market leader in the design, development, manufacture and technical support of high performance geosynthetic systems for use in a wide range of civil engineering, highway, structures, environmental and building projects.

Formed in 1988, based in Meltham, in the heart of the Pennines, ABG have developed an excellent reputation for developing quality products and delivering outstanding service. The ability for rapid product development ensures that the most innovative, up to date and cost effective solution can be found for many engineering problems.

ABG's involvement in geocomposites goes back over twenty five years and we now have the most comprehensive range of products developed specifically for use in this sector. During this period ABG has supplied major projects in the UK and worldwide.

Technical support on ABG systems is provided by our trained and experienced staff, many of whom are Chartered Civil Engineers. This extensive support extends to full design, design validation, feasibility studies, cost advice and advice on meeting regulatory requirements.

Part of this technical support includes developing and driving knowledge within our active markets including working with both international and local regulatory bodies on developing guidance and best practice in the use of innovative geosynthetics to solve complex engineering issues.

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