



ABG Deckdrain

A guide to the selection and specification of ABG Deckdrain drainage geocomposite

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Deckdrain Geocomposite

Traditional structural drainage methods rely on depositing large volumes of aggregates, which can be difficult to place, especially for back of wall applications. The number of site vehicle movements and deliveries also creates a heavy carbon footprint.

The **Deckdrain** geocomposite range provides a modern alternative for transport infrastructure, water service reservoirs and landscaping applications - where its high flow capacity and puncture resistance offer excellent drainage and protection properties.

Deckdrain 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 Deckdrain also enables low grade recycled material to be used as backfill.



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Advanced performance

Deckdrain is a high performance geocomposite drainage layer providing an environmentally friendly alternative to traditional aggregate based drainage methods.

Deckdrain consists of a high strength flexible polyethylene cusped core with a non-woven geotextile bonded onto one or both sides.

The geotextile filters a wide range of materials, allowing water to percolate into the core to be efficiently transported away to a discharge point. The geotextile is bonded to the core to ensure that it does not deform into the drainage passages under the load of the backfill material, thereby ensuring continuity of the drainage void.

The single cusped HDPE core forms a high-performance drainage layer with a clear void to allow flow in all directions. The compressive strength and creep resistance properties of Deckdrain ensure that the core maintains its drainage capacity even when subjected to long term compressive loads.



Deckdrain is durable and sufficiently robust to resist the mechanical stresses imposed during installation and throughout its design life.

Use of Deckdrain will eliminate the need for further protection of the waterproofing.

Advantages

When compared with aggregate drainage layers Deckdrain geocomposites are much thinner yet offer superior flow characteristics. This reduces dead loads associated with aggregate drainage layers and may reduce required thickness of roof slab constructions.

The wide roll Deckdrain composites are especially suited for rapid installation on large block paving or roof drainage projects.

Deckdrain enhances structural waterproofing performance by providing an additional barrier that prevents the majority of the water reaching the liner.

The high CBR puncture resistance of Deckdrain provides protection and prolongs the life of the waterproofing.

Installation

Deckdrain is easy to handle and is rapidly installed without the need for specialist equipment.

Deckdrain has a built in geotextile overlap that ensures integrity of the drainage layer across the entire installation area.



Structural drainage

Deckdrain geocomposite drainage layer is ideal for structural drainage applications.

Deckdrain geocomposite drainage layer is ideal for structural drainage applications; it provides sub-surface drainage with higher performance and lower cost than conventional granular filter layers. It has been specially designed to be compatible with structural waterproofing and to give the optimum performance over the whole life of the structure.

Deckdrain enhances the performance of the waterproofing systems by providing an additional barrier, preventing the majority of the water reaching the waterproofing system.

Deckdrain geocomposite drainage system has a proven record in structural drainage and offers a 120 year design life.



Buried structures

When installed on external faces of a buried structure, Deckdrain collects and drains percolated groundwater from the backfill material. Installed with the flat face of the core against the structure and dimpled face against the backfill, Deckdrain also provides a high level of protection to the waterproofing system.

Retaining Structures

Deckdrain installed behind retaining structures acts as an efficient groundwater drainage system. Deckdrain provides a high-level of protection to the structure offering drainage capacity 10 to 50 times better than filter stone.

Deckdrain Applications

A strong, robust geocomposite layer designed to:

- Relieve external water pressure from buried structures
- Provide drainage behind retaining walls, potable water reservoir roofs and walls, tunnels & roof gardens
- Provide drainage under block paving
- Relief of uplift pressure beneath tanks, slabs and culverts
- Capillary break layer below base slabs
- Deckdrain can be applied horizontally on roofs and below base slabs or vertically against walls.



Deckdrain Advantages

- Cost effective
- Allows use of lower specification backfill materials
- Reduced excavation and backfill
- Technically defined filter properties
- High impact and crush strength
- Long life performance and high flow capacity
- Provides additional protection to waterproofing system
- Easy and quick to install.



| Product | Thickness | In-plane water flow l/m ² (HG 1.0 @ 20kPa confining pressure) |
|----------------|-----------|--|
| Deckdrain 400 | 4mm | 0.85 |
| Deckdrain 600 | 6mm | 1.45 |
| Deckdrain 700 | 7mm | 2.4 |
| Deckdrain 1200 | 12mm | 4.25 |
| Deckdrain 25 | 25mm | 11 |
| Deckdrain 50 | 50mm | 95 |

Landscaping drainage

Deckdrain has the mechanical properties to make it ideal for use in landscaping drainage.

Deckdrain has a structure and the physical attributes to make it ideal for use in block paving drainage. Its hydraulic properties offer reliable and sustainable performance, whilst the mechanical properties ensure the product endures the rigours of installation and long-term loading.

Its primary function is to collect and remove seepage water from the sand course below block paving. This helps prevent saturation of the sand, especially critical in constructions where traffic loading is expected and the foundation layer is relatively impermeable (i.e. concrete, asphalt, roof decks, etc.). In order for the sand course to provide adequate support to the blocks it must be relatively dry. If the sand becomes saturated with seepage water, the traffic load may cause liquefaction of the sand resulting in pumping occurring through the joints. This condition is easily identified on existing sites by surface staining and open joints. In severe cases the blocks will be loose and uneven.

The solution is to lay Deckdrain below the sand to prevent the sand becoming saturated. Deckdrain also provides protection against puncture where a waterproofing membrane is required below the block paving (i.e. Roof top car parks or tanked SuDS pavements).

Water collected by the Deckdrain is discharged from the Deckdrain into standard flanged roof deck outlets or via purpose made fittings that connect to linear channels.

Green roofs, bridges and podium decks

Deckdrain offers an effective and reliable drainage system for roof gardens, green bridges and podium decks of all sizes, with the high CBR puncture resistance protecting the waterproofing from backfilling forces and root penetration.



ABG Associated Products

A range of sustainable structural drainage and landscaping products.



Permeable Paving

ABG offer a range of components for integrated porous paving systems to effectively manage the safe collection, treatment, management and dispersal of surface water.



Highways Drainage

ABG drainage geocomposites offer very high flow capacity and provide a cost effective alternative to traditional stone groundwater drainage solutions.



Tree Root Protection

The Abweb TRP system is a no dig solution preventing damage to tree root structures during the installation process and greatly reduces the depth of imported stone required.



Webwall Retaining Walls

Webwall is a geosynthetic system designed for the construction of flexible retaining walls. It uses a geocellular mattress which is laid in layers, with each expanded and filled with site won materials in order to form a structure with a vegetated face.

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, 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.

Technical support 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.

In support of the construction industry's objectives to reduce the carbon footprint of civil engineering activities, ABG has signed up to the UK Civil Engineer's Emergency Climate Change Declaration. As part of this commitment, ABG has appointed leading carbon management consultants Carbon Footprint Ltd to verify the exact carbon emissions for each of the products we manufacture for geotechnical and Sustainable Drainage applications. This enables precise embodied carbon data to be given for a customer's project and supply chain assessments.

To discuss your project specific requirements contact us.

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