



Deckdrain

A guide to the selection and specification of Deckdrain drainage geocomposite

Deckdrain

Deckdrain is a high performance geocomposite which offers an environmentally friendly alternative to traditional structural drainage techniques that utilise aggregates

Deckdrain consists 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 allowing continuity of the drainage void.

The single cusped HDPE core forms

a high-performance drainage layer with clear void to allow flow in all directions. The compressive strength and creep resistance properties of Deckdrain ensures that the core maintains its drainage capacity, even when subjected to compressive loads.

Deckdrain is durable and sufficiently robust to resist the mechanical stresses imposed during installation and throughout the 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 the roof slab construction.

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 plant.

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

Health safety and environment

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

Supply

Deckdrain is Manufactured in 4mm, 6mm, 7mm, 12mm & 25mm thickness and 1.1m, 2.2m or 4.4mm wide rolls.

Chemical resistance

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

Deckdrain Advantages

- Cost effective
- Allows us 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.
- Compatible with most waterproofing systems; provides additional protection to waterproofing system.
- Easy and quick to install.

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.



Structural Drainage

Deckdrain geocomposite drainage layer is ideal for structural drainage applications; it provides sub-surface drainage with higher performance and lower cost than conventional granular filters 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

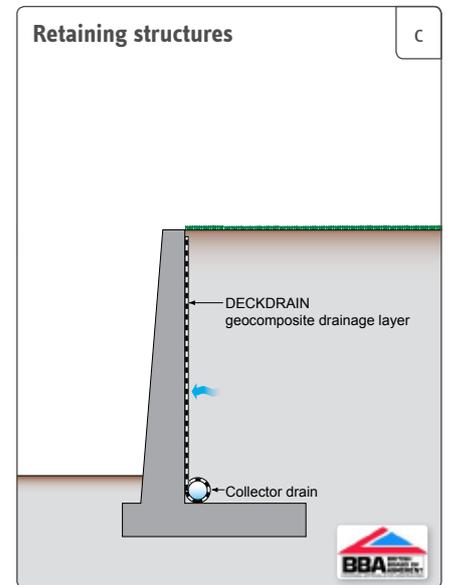
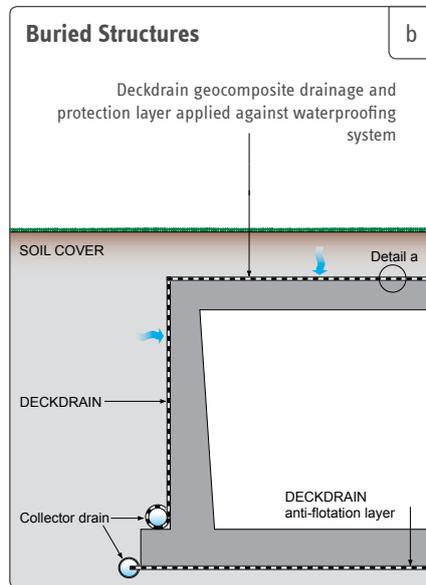
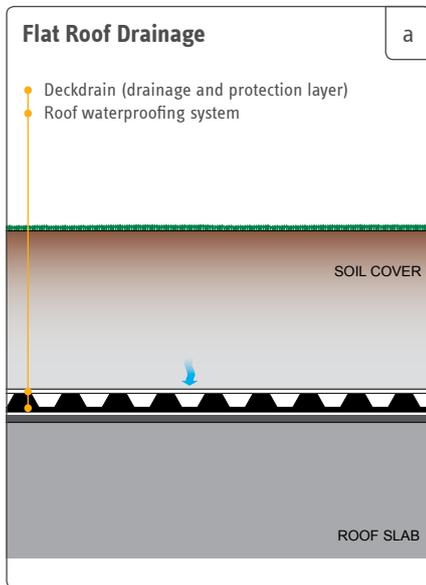
When installed on external faces of a buried structure Deckdrain collects and drains percolated groundwater from the backfill material. Installed with the flat face of the core against the structure and dimpled face against the backfill, Deckdrain also provides a high level of protection to the waterproofing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

Applications

Potable water reservoirs, water/sewage treatment plants, pumping stations, basements and many other sub-surface applications. Deckdrain will resist the high loads of extremely deep basements and horizontal applications.



Block paving, roof and podium deck 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 (e.g. 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 liquify 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

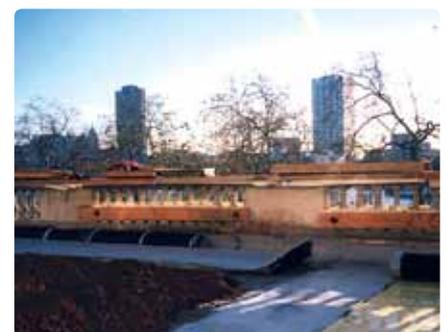
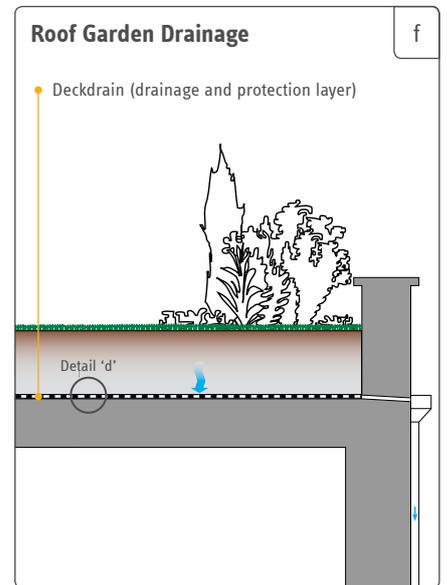
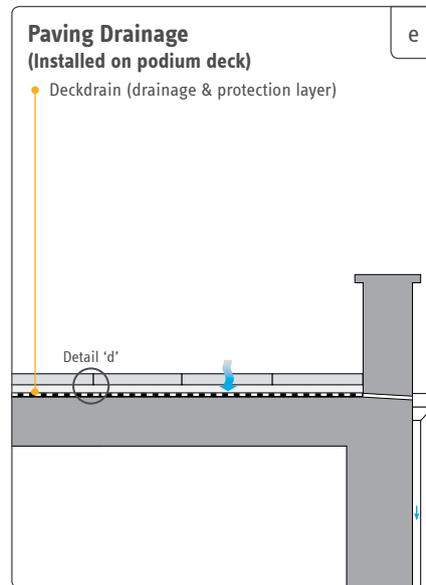
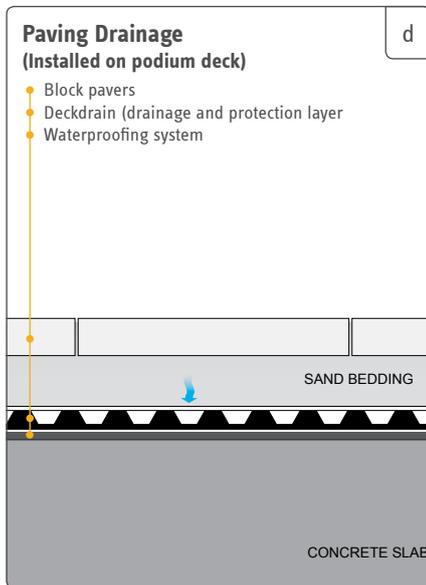


waterproofing membrane is required below the block paving (e.g. roof top car parks or tanked SuDS pavements).

Green roofs and podium decks

Deckdrain offers an effective and reliable drainage system for roof gardens and podium decks of all sizes.

The high CBR puncture resistance of Deckdrain protects the waterproofing from backfilling forces and root penetration.



Special applications

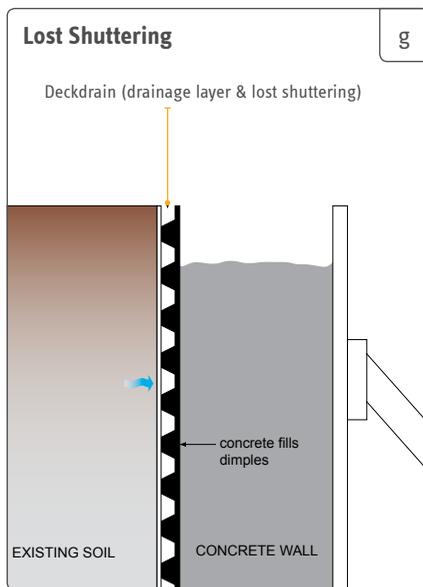
Deckdrain geocomposites are widely used in structural drainage applications where its high flow capacity and puncture resistance offer excellent drainage and protection properties.

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 often enables low grade recycled material to be used as backfill.



Lost shuttering

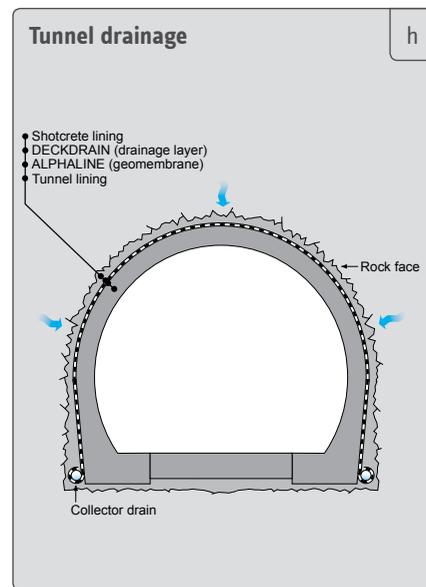
Deckdrain as a lost shuttering is installed with the flat face of the core towards the concrete and dimples against the existing soil. Poured concrete fills the dimples and Deckdrain becomes an integral part of the new structure. It acts as a groundwater drainage system providing a high level of protection to the new structure.



Tunnels

Deckdrain is highly effective for use in the structural drainage of cut and cover tunnel constructions.

In cut and cover tunnel constructions the use of Deckdrain provide a highly effective drainage zone. against the structure whilst offering the additional benefit of acting as a durable protection layer against the



chosen waterproofing system protecting it from damage during the construction phase of the project..

Deckdrain is a direct replacement for the granular drainage backfill, traditionally used in these constructions, thereby saving material movements and handling both during the excavation and backfilling operations.

Associated materials

ABG manufacture a complementary 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
- Abtex** 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

ABG Service

ABG provide full service from initial consultation, design and specification through to advice on installation and on-going maintenance. Our in-house Technical Team, many of whom are chartered civil engineers offer practical advice and guidance to the project team whilst ensuring that the requirements of the regulatory requirements and codes of practice are met.

- Project design
- Design confirmation
- Feasibility study
- Cost advise
- System development

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