

Technical Datasheet ATAL FLO BOARD 4E

Description

Atal Flo Board 4e 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 and 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 a clear void to allow flow in all directions. The compressive strength and creep resistance properties of Atal Flo Board 4e ensure that the core maintains its drainage capacity, even when subjected to compressive loads. Atal Flo Board 4e is durable and sufficiently robust to resist the mechanical stresses imposed during installation and throughout the design life.

Advantages

Compared with aggregate drainage layers, Atal Flo Board 4e geocomposites are much thinner yet offer superior flow characteristics. This reduces dead loads associated with aggregate drainage layers and may reduce the required thickness of the roof slab construction. Atal Flo Board 4e enhances structural waterproofing performance by providing an additional barrier preventing most water from reaching the liner. The high CBR puncture resistance of Atal Flo Board 4e provides protection and prolongs the life of the waterproofing.

Installation

The geocomposite can either be unrolled across the wall structure with the flapped edge at the bottom or lengthways down the wall structure and cut to length as required. The flat face of the core must be secured against the structure, and the geotextile must face the cusped side towards the backfill to ensure efficient water filtration across the geotextile. Where the geocomposite is laid on vertical structures in the vertical plane, it can be supported at the top of the wall with ballast (such as sandbags) and at the bottom with filter stone before backfilling. The membrane can be fixed into self-sealing bentonite membranes using Atal Soft Washer Fixings. Jointing is done by butting the cores, ensuring the 100 mm geotextile overlapping piece is located over the joint. Subsequent rows of geotextile can be installed similarly, with the final row overlapped using a separate geotextile piece to seal the complete installation.

A perforated pipe is used at the base of the wall to collect water from the geocomposite and must be placed as closely as possible and surrounded with filter stone.

It is essential that during the lapping process, no gaps are left in the installed Flo board System that could allow the soil to enter the core. At corners, Flo board must be cut and re-sealed.

Backfilling

Before backfilling, the installed geocomposite must be inspected to ensure it has been securely fitted into position and that all joints are completely sealed. Backfill material must not contain sharp or large stones that could tear or damage the geocomposite during compaction and is usually SHW class 6 or 7 backfill material. Care must be taken to avoid damaging the geocomposite during the backfilling process. When compacted, the backfill material's permeability should equal that of the native soil. Where the geocomposite is laid as transverse strips across a wall, backfilling is brought up progressively in layers as subsequent rolls are installed. Compacting

Technical Datasheet ATAL FLO BOARD 4E

equipment can operate close to the geocomposite without causing damage. Backfilling can proceed in one operation where the geocomposite is laid vertically in upright lengths and adequately secured (see section 12.4).

Health, Safety and Environment

All Atal Flo Board 4e components are inert and do not pose a health hazard.

Supply

Atal Flo Board 4e is manufactured in 1.1m x 50m rolls.

Chemical Resistance

Atal Flo Board 4e has excellent resistance to petrol, oils, acids, alkalis, leachate, and all common chemicals.

Atal Flo Board 4E 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.
- Atal Flo Board 4e can be applied horizontally on roofs, below base slabs, or vertically against walls.
- Atal Flo Board 4e geocomposite drainage layer is ideal for structural drainage applications; it provides subsurface 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. Atal Flo Board 4e enhances the performance of the waterproofing systems by providing an additional barrier, preventing most of the water from reaching the waterproofing system. Atal Flo Board 4e geocomposite drainage system has a proven record in structural drainage and offers a 120-year design life.

Geotextile Properties						
Thickness at 2kPa	mm	1.2			±10%	EN ISO 9863-1
Tensile strength MD / CMD	kN/m	9.5 / 9.5			-13%	EN ISO 10319
Pore size O ₉₀	µm	120			Nominal	EN ISO 10319
CBR puncture resistance	N	1600			-20%	EN ISO 12236
Dynamic perforation cone drop	mm	32				
Type and material	Non-woven needle-punched and heat-treated long staple fibre polypropylene101					

Technical Datasheet ATAL FLO BOARD 4E

Geocomposite Properties						
Thickness at 2kPa	mm	4.6			±10%	EN ISO 9863-1
Mass per unit area	g/m ²	590			Approx.	EN ISO 9864
Tensile strength MD / CMD	kN/m	9.5 / 9.5			-13%	EN ISO 10319
Elongation at peak MD / CMD	%	40 / 50			Nominal	EN ISO 10319
CBR puncture resistance	N	2 150			-20%	EN ISO 12236
Perpendicular Water Inflow	Dimple side only					
Water flow at 50mm head	l/m ² .s	101			±30%	EN ISO 11058
At 2kPa permeability (coefficient)	m/s	2.6 x 10 ⁻³			±30%	EN ISO 11058
Breakthrough head	Mm	0			nominal	
In-plane water flow MD		HG = 1.0		HG = 0.1		Hydraulic gradient
at 20kPa confining pressure	(l/m.s)	0.85	±0.15	0.25	±0.07	EN ISO 12958
at 100kPa confining pressure	(l/m.s)	0.65	±0.15	0.20	±0.05	EN ISO 12958
at 200kPa confining pressure	(l/m.s)	0.55	±0.15	0.15	±0.05	EN ISO 12958
With soft foam contact surfaces to simulate textile intrusion into the core due to soil pressure. The confining pressures of the flow rates shown above are all equal to or less than the long-term compressive strength of the product.						
Resistance to weathering		To be covered in 28 days				EN 12224
Resistance to chemicals		Excellent				EN 14030
Design life		120 years (manufacturer's declaration)				

Atal Technical Support

Atal offers nationwide and comprehensive technical support for all types of sites and construction projects.

Our team of CSSW qualified technical managers, technical advisors and site support operatives will be happy to help with our [free design service](#), free site visits, and free product training.

Atal is proud to support your project from the beginning stages, right up to the end.

Atal CPD Seminars

Atal CPD Seminars offer in-depth overviews of structural waterproofing, ground gas protection, building regulations, and industry standards.

Our seminars are created by our team of CSSW qualified technical managers, capable of catering to a project of your choosing, and are available for everyone eager to learn about or continue their professions in the construction industry.

Book your FREE CPD Seminar here.

<https://ataluk.com/our-services/book-a-cpd>

For any enquiries, or help with your project requiring structural waterproofing, contact us via phone or email below. **01495717202** | enquiries@ataluk.com.