

# Modular Drainage System

## Technical Specification



**Porosity and Infiltration Rate:** Manufactured from recycled end of life tyre rubber, which provides a notably high porosity averaging 45% and with an infiltration rate between 8,000 to 10,000 mm/hr – a superior geocomposite modular drainage system is presented to replace traditional drainage materials. The material design allows filtration performance to be adjusted to accommodate various sediment types, maintaining high hydraulic conductivity and avoiding blockages.

**Durability and Structural Integrity:** Certified and PADS approved by Network Rail, the robust open pore structure facilitates easy water flow, enhancing infrastructure resilience against more frequent severe weather and heavier rainfall events.

**Installation Efficiency:** The system is designed for installation concurrent with excavation activities, using standard rail industry equipment to markedly reduce project duration and labour requirements.

Property	Standard	Results
Density		750kg /m <sup>3</sup>
Porosity / Void Ratio	ASTM C642	(40% to 54%) Avg. 45%
Fatigue Testing	BS EN 604	Specimen Area m <sup>3</sup> 0.0009503 500,000 cycles 195 kPa Deformation no greater than 5%
Compressive Strength	BS EN 604	20% Strain 1,000 kN/m <sup>2</sup>
Resistance to Temperature, Water	ASTM D4065	Pass
Carbon Reporting	Life Cycle Assessment	Minimum of 90% waste materials within the overall composite
Resistance to Chemicals (Petrol, Diesel, De-icer, Road Salt)	DEF STAN 00-035 Part 3	No visual surface change or deterioration was observed
Toxicology and Environmental	NF P 90-112:2016	Heavy Metals Pass. PAH: Pass Environmental safety confirmed
Water Permeability Constant Head	BS EN ISO 11058	Specimen Area m <sup>2</sup> 0.0039 Flow Velocity V20 m/s 0.049 L/m <sup>2</sup> /s 49 Permeability m/s 0.051
In Plain Water Flow Hydraulic Gradient 0.1	BS EN ISO 12958	Soft/Soft Platens Hydraulic Gradient 0.1 10 kPa L/s/m 0.55 50 kPa L/s/m 0.43
In Plane Water Flow Hydraulic Gradient 1.0	BS EN ISO 12958	Soft/Soft Platens Hydraulic Gradient 1.0 10 kPa L/s/m 1.88 50 kPa L/s/m 1.19

- **Recycled Material Composition:** Constructed from 100% recycled rubber tyres.
- **High Porosity Blocks:** Engineered for maximum water infiltration and drainage efficiency.
- **Modular Design:** Allows for easy installation, expansion, and repair.
- **Durability:** Rubber material ensures long-term durability and resilience.
- **Chemical Resistance:** Offers resistance to common roadway chemicals such as petrol, diesel, de-icer, and road salt.
- **Environmental Compliance:** Free from harmful heavy metals and PAHs, complying with environmental safety standards.
- **Temperature Resistance:** Maintains performance in both hot and cold environments.
- **Flexibility:** Accommodates minor ground movements, reducing the risk of system failure.
- **Load-Bearing Capacity:** Designed to handle standard loading conditions in drainage applications.
- **UV Resistant:** Treated to resist UV degradation, prolonging the system's lifespan.

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