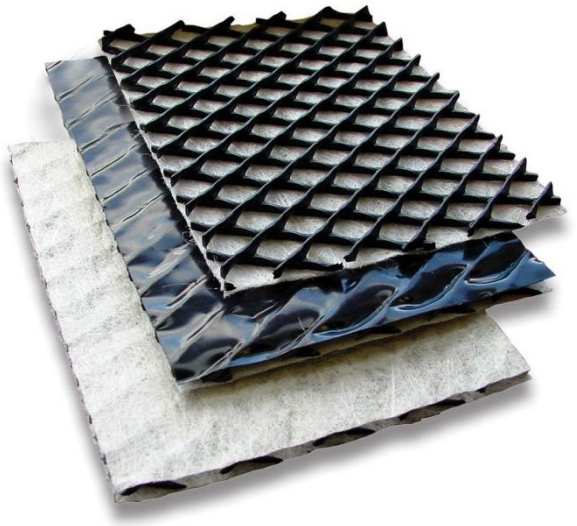
# TERRAM Drainage Composites



## Function

**Separation** - separates different soil types from one another or from other structural components

**Filtering** – ensures water permeability while filtering out the smallest soil particles

**Drainage** – collects water over a large area and directs it to connected drainage systems

## Notes

The products are delivered packaged in PE film to protect them from damage caused by UV radiation. It is recommended to keep the products packaged until installation. Once removed from the film, they should be installed within 14 days and adequately covered to protect them from unnecessary UV radiation.



## Description

TERRAM drainage mats consist of an extruded plastic geonet made of high-quality, durable, and pressure-resistant polyethylene (HDPE). Depending on the application, the geonet is then laminated with a TERRAM filter fleece or a water-impermeable film. These composite materials are used for large-scale drainage, capturing water and directing it away from the areas to be protected.

Thanks to their water-permeable and targeted drainage properties, TERRAM composite materials help make structures safer and more durable, thereby providing a cost-effective alternative to traditional methods such as filter stones or gravel layers. In addition, TERRAM drainage composites ensure high mechanical strength and excellent long-term durability in all soil types.

## Applications

- **Bridge construction** – as backfill for the structure to reduce earth pressure and prevent water saturation of the fill material
- **Transportation infrastructure construction**
- **Landfill construction** – with additional requirements for compressive strength and long-term durability
- **Green roofs**
- **Foundations** and basements
- **Underground parking garages**
- **Retention basins**
- **Rainwater management and environmental engineering**



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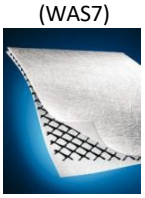
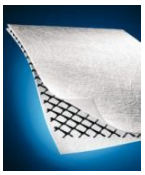
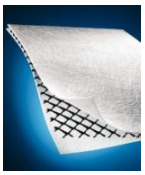
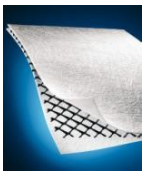
# TERRAM drainage composites

## Technical data

| | TERRAM B1 | TERRAM 1B1 (WAS7) | TERRAM 1BZ | TERRAM 1C1 | TERRAM 1D1 | TERRAM 1E1 |
|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |
| **Composite Structure** | TERRAM T1000 Pressure grid B | TERRAM T1000 Pressure grid B TERRAM T1000 | TERRAM T1000 Push-through grid B PE film | TERRAM T1000 Pressure grid C TERRAM T1000 | TERRAM T1000 Push-through grid D TERRAM T1000 | TERRAM T1000 Push-through grid E TERRAM T1000 |
| **Mechanical Properties - Composite Material** | | | | | | |
| Tensile strength MD/CD (EN ISO 10319) N/m | 13.0 / 10.0 (-1.3) (-1.0) | 24.0 / 22.0 (-2.4) / (-2.2) | 18.0 / 14.0 (-1.8) / (-1.4) | 25.0 / 20.0 (-2.5) / (-2.0) | 25.0 / 20.0 (-2.5) / (-2.0) | 33.0 / 21.0 (-3.3) / (-2.1) |
| Maximum tensile strain MD/CD (EN ISO 10319) % | 30 / 42 (± 5) (± 5) | 35 / 42 (± 5) (± 5) | 35 / 43 (± 5) (± 5) | 35 / 40 (± 5) (± 5) | 35 / 40 (± 5) (± 5) | 30 / 42 (± 5) (± 5) |
| (CBR) Penetration force (EN ISO 12236) N | 2,000 (-200) | 3,500 (-350) | 2,500 (-250) | 3,300 (-330) | 3,300 (-330) | 3,800 (- 380) |
| Conical drop test (EN ISO 13433) mm | 38 (+ 5) | 38 (+5) | 38 (+5) | 38 (+5) | 38 (+5) | 34 (+ 5) |
| **Hydraulic Properties - Filter Nonwoven** | | | | | | |
| Water permeability (H50) (EN ISO 11058) l/m²s | 75 (± 20) | 75 (± 20) | 75 (± 20) | 75 (± 20) | 75 (± 20) | 75 (± 20) |
| Opening width (O90) (EN ISO 12956) µm | 50 (-15) | 50 (-15) | 50 (-15) | 50 (-15) | 50 (-15) | 50 (-15) |
| **Hydraulic Properties - Composite** | | | | | | |
| Discharge capacity MD i = 1 @ 20 kPa | 1.40 (-0.20) | 0.70 (-0.10) | 0.80 (-0.10) | 1.20 (-0.10) | 1.90 (-0.40) | 2.80 (-0.10) |
| hard/hard i = 1 @ 200 kPa | 1.20 (-0.20) | 0.65 (-0.10) | 0.70 (-0.10) | 1.05 (-0.10) | 1.30 (-0.20) | 2.60 (-0.10) |
| i = 1 @ 200 kPa | 1.10 (-0.20) | 0.60 (-0.10) | 0.55 (-0.10) | 1.00 (-0.10) | 1.00 (-0.10) | 2.40 (-0.10) |
| (EN ISO 12958) l/m·s i = 1 @ 400 kPa | 0.65 (-0.20) | 0.20 (-0.10) | 0.35 (-0.10) | 0.75 (-0.10) | 0.75 (-0.10) | 2.10 (-0.10) |
| i = 0.1 @ 20 kPa | 0.37 (-0.03) | 0.18 (-0.03) | 0.20 (-0.03) | 0.35 (-0.03) | 0.50 (-0.08) | 0.80 (-0.03) |
| i = 0.1 @ 100 kPa | 0.31 (-0.03) | 0.15 (-0.02) | 0.17 (-0.03) | 0.30 (-0.02) | 0.35 (-0.07) | 0.75 (-0.03) |
| i = 0.1 @ 200 kPa | 0.27 (-0.03) | 0.10 (-0.02) | 0.15 (-0.03) | 0.25 (-0.02) | 0.25 (-0.02) | 0.70 (-0.03) |
| i = 0.1 @ 400 kPa | 0.19 (-0.03) | 0.05 (-0.02) | 0.10 (-0.02) | 0.20 (-0.02) | 0.20 (-0.02) | 0.60 (-0.03) |
| **Physical Properties** | | | | | | |
| Material thickness at 2 kPa (EN ISO 9863-1) mm | 5.0 | 5.0 | 5.0 | 5.9 | 7.5 | 9.3 |
| Basis weight (EN ISO 9863) g/m² | 530 | 680 | 840 | 780 | 1,180 | 1,400 |
| **Durability** | | | | | | |
| Weather resistance 50 MJ/m² (EN 12224) % | >90 | >90 | >90 | >90 | >90 | >90 |
| Microbiological resistance (EN 12225) % | no effect | No effect | No effect | No effect | No effect | no influence |
| Resistance to acids/alkalis (EN 14030) % | No effect | No effect | No effect | No effect | No effect | no effect |
| Oxidation after 85 days (100 years) (EN 12226) % | >90 | >90 | >90 | >90 | >90 | >90 |

As part of its continuous improvement process, EcoTrade Leipzig GmbH reserves the right to change the specifications listed here without notice.

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