# GPT 14 Protection and Drainage Composite

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**1. Description**

GPT 14 geocomposite is comprised of longitudinal band drains incorporated within a needlepunched geotextile to provide low-cost area drainage and protection to a membrane. All components are manufactured from 100% virgin polymer for assured durability and compliance with EA guidance documents.

**2. Features**

- Guaranteed as 100% Prime Grade Virgin Polymer – contains no post-consumer or post-industrial recycled polymer
- High interface friction with soils for optimum stability on slopes
- 5.9m wide for rapid installation
- Reliable drainage and protection with a single product
- UV protected (1% active carbon black)
- Chemically inert
- Simple jointing

| | Test Standard | Unit | Mean Values |
|---|---|---|---|
| **3. Mechanical Properties – Composite** | | | |
| Static puncture (CBR) | EN ISO 12236 | kN | 14 |
| Tensile strength (MD/CMD) | EN ISO 10319 | kN/m | 75 |
| Tensile elongation (MD/CMD) | | % | 80 |
| Cone drop | EN ISO 13433 | mm | 0 |
| Protection efficiency | EN ISO 13719 | $kN/m^2$ | $48 \cdot 10^3$ |
| **4. Filter Properties – Protection Geotextile** | | | |
| Apparent opening size | EN ISO 12956 | µm | <69 |
| Water permeability $v_{H50}$ | EN ISO 11058 | $l/(m^2 \cdot s)$ | 16 |
| Coefficient of permeability | | m/s | $2.5 \cdot 10^{-3}$ |
| **5. Physical Properties – Protection Geotextile** | | | |
| Thickness @ 2kPa (Nominal) | EN ISO 9863-1 | mm | 7.8 |
| Carbon black content | | | 1% active carbon black |
| Standard colour | | | Black |
| Polymer | | | 100% virgin polypropylene |
| Construction | | | Needlepunched |
| **6. Physical Properties – Band Drain** | | | |
| Core material | | | Virgin polypropylene |
| Width | | mm | 100 |
| Thickness | EN ISO 9863-1 | mm | 5.0 |
| **7. Hydraulic Properties – Band Drain** | | | Band drain per meter width = 1 |
| In plane flow capacity i = 1 @ 20kPa | EN ISO 12958 | l/(m·s) | 0.25 |
| i = 1 @ 200kPa | | | 0.19 |
| i = 1 @ 300kPa | | | 0.15 |

Notes:

a) Mean values indicate the arithmetic mean derived from the samples taken for any one test as defined in the standard – usually an overall mean of five samples. Mean values are subject to tolerances based on 95% confidence limits as published on the product CE declaration of performance.
b) Nominal Value (indicates an average manufacturing norm and not a controlled performance parameter).
c) MD: Machine Direction (longitudinal to the roll).
d) CMD: Cross Machine Direction (across the roll).
e) Tensile testing is performed using extensometers.
f) In plane flow capacity tested using soft/soft platens.

| | Test Standard | | Values |
|---|---|---|---|
| **8. Durability – Composite** | | | |
| Weathering 50 $MJ/m^2$ (1 month) | EN ISO 12224 | | >90% Retained Strength |
| Microbiological resistance | EN ISO 12225 | | No loss in strength |
| Resistance to acids & alkalis | EN ISO 14030 | | No loss in strength |
| Oxidation at 112 days (100 years) | EN ISO 13438 | | >90% Retained Strength |

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**9. Needle Detection**

During manufacture, the protection geotextile passes close to three sets of magnets which remove metal particles up to 12g and >2mm. Just before the roll up, the geotextile passes through an electronic metal detection field. Audio and visual alarms indicate if metal particles are detected. Rolls are sent to stock if they pass through the field without an alarm event or, in the case of an alarm event, the operator inspects the suspect area, locates any metal particles and removes them. If unsuccessful, or if any doubt remains as to the presence of metal particles, then the roll goes to the re-inspection facility.

**10. Testing**

All materials are tested every 6000m$^2$ in an UKAS accredited ISO 17025 laboratory to all mechanical properties prior to release.

**11. Storage**

The geocomposites are supplied in packaging designed to protect the product from damage during handling, storage and degradation as a result of UV exposure. The product should be kept in appropriate packaging until such time that it is required for installation. The product is clearly and indelibly marked with the product name along the edge of the roll at regular intervals no greater than 5m. The packaging is labelled clearly to identify the product supplied in accordance with EN ISO 10320: Geotextile and Geotextile related products – Identification on site. Use slings where provided. Product weights are given on roll tickets. Use equipment appropriate to weight and dimension. Store and handle in accordance with good occupational health and safety practice.

| | Unit | Values |
|---|---|---|
| **12. Dimensions** | | |
| Standard roll length | m | 50 |
| Standard roll width | m | 5.9 |
| Approximate roll weight | Kg | 370 |