

**GEOTERRA® Structural Mat System**



The GEOTERRA® system is an integrated, open, structural mat that consists of varying components depending on site conditions and loading requirements. The system's design and construction flexibility allows the use of only those components required for the project, reducing cost and waste.

Three typical mat systems are presented below, listed in order from the most basic to the most rigorous requirements.

Consult Presto Products Company for assistance in determining appropriate system components for specific project needs.

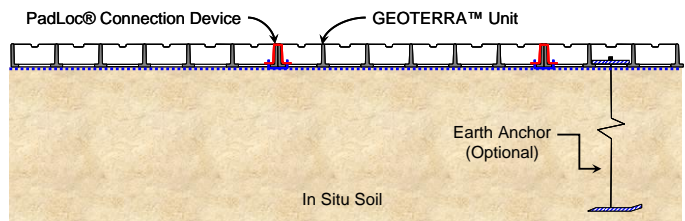
**GEOTERRA® System Components**

**BASIC Components:**

- GEOTERRA Units
- PadLoc Connection Device
- Stakes or Earth Anchors (optional)

**Typical Applications:**

Prevent rutting, Protect turf, Use over sand, Create a uniform/stable surface



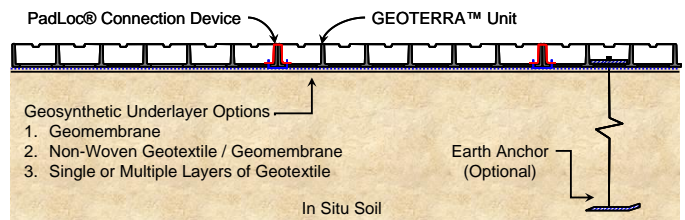
**BASIC GEOTERRA COMPONENTS**

**OPTIONAL Geosynthetic Underlayer Components:**

- Geomembrane
- Non-Woven Geotextile/Geomembrane
- Single or Multiple Layers of Geotextile

**Typical Applications:**

Provide load support over poor/wet soils, Prevent rutting, Prevent subbase degradation/contamination, Create a uniform/stable surface



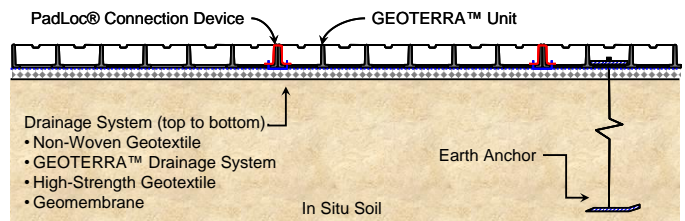
**OPTIONAL GEOSYNTHETIC UNDERLAYER OPTIONS**

**OPTIONAL Drainage Components:**

- Non-Woven Geotextile
- GEOTERRA Drainage System
- High-Strength Woven Geotextile

**Typical Applications:**

Provide load support over poor/wet soils (primarily over clay soils in high rainfall areas)  
 Create an integrated drainable surface  
 Prevent subbase degradation /contamination, Create a uniform/stable surface

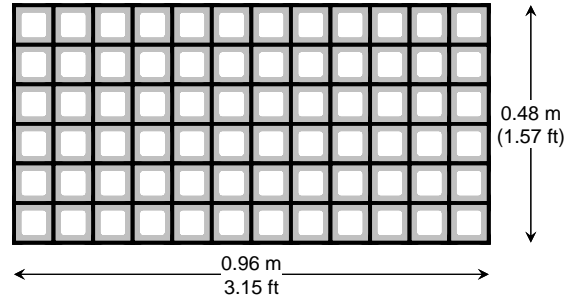


**OPTIONAL DRAINAGE COMPONENTS**

**GEOTERRA® Material Properties and Dimensions**

Physical details of the GEOTERRA units used to form the top load-distribution / surface-wear layer are:

|                        |   |
|------------------------|---|
| <b>Length:</b>         | 0.96 m (3.15 ft)                            |
| <b>Width:</b>          | 0.48 m (1.57 ft)                            |
| <b>Depth:</b>          | 50 mm (2 in)                                |
| <b>Area:</b>           | 0.46 m <sup>2</sup> (4.95 ft <sup>2</sup> ) |
| <b>Weight:</b>         | 4.5 kg (9.9 lb)                             |
| <b>Material:</b>       | Polyethylene                                |
| <b>Crush Strength:</b> | 2900 kPa (420 psi)                          |



**SINGLE GEOTERRA™ UNIT**

Individual GEOTERRA units are connected and secured with the PadLoc Connection Device to form continuous, interconnected GEOTERRA mats sized to meet specific requirements of the application area.

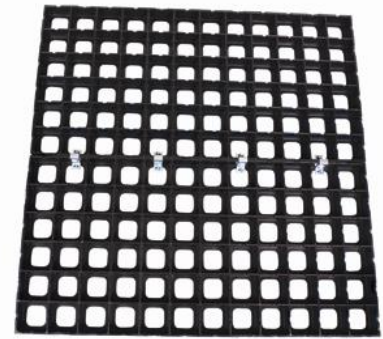
**The PadLoc® Connection Device**

The PadLoc® Connection Device is used to connect and secure individual adjoining GEOTERRA units to form GEOTERRA mats. PadLoc connection tools are used to secure the Padloc devices.

PadLoc Connection Devices can be removed and the GEOTERRA mat system can be disassembled for removal, storage and reuse.



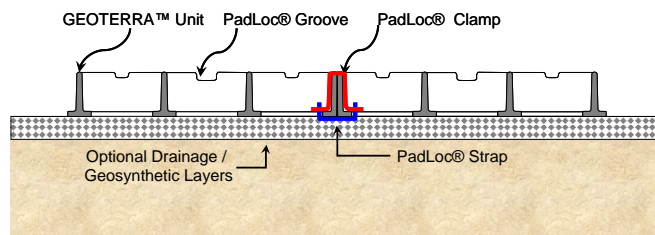
**PADLOC® CONNECTION DEVICE**



**CONNECTED GEOTERRA™ UNITS**

Four grooved connection points exist on the long side of the GEOTERRA unit and two points on the short side.

PadLoc Connection Devices should be placed at all connection points and secured.



**GEOTERRA™ SYSTEM CROSS-SECTION**

**OPTIONAL: Non-woven Geotextile**

If required, a 240 g/m<sup>2</sup> (8 oz/ft<sup>2</sup>) non-woven geotextile is placed directly over the subgrade, or over the interconnected GEOTERRA drainage system. A minimum 0.30 m (12 in) overlap is required at seams to ensure proper filtering.

The non-woven geotextile functions as a filter, allowing water to flow through it while providing a separation layer between the subgrade soils and the GEOTERRA mat system. The geotextile also prevents soil-fines from pumping and causing possible clogging of the GEOTERRA drainage layer when the drainage components are part of the system.

**OPTIONAL: High-Strength Geotextile**

If required, the high-strength woven geotextile shall have a 70 kN x 70 kN per meter (4800 lbf/ft) minimum wide-width tensile strength at 20% maximum elongation (ASTM D 4595), and a maximum apparent opening of 0.425 mm (16.7 mil) (ASTM D 4751).

For rigorous conditions, the high-strength geotextile provides a double function; first as a separation layer and second as soil reinforcement. The geotextile is placed directly on the graded, in-situ soil. A minimum 0.25 m (10 in) overlap is required at seams. Depending on the application, the strength requirements will vary.

**OPTIONAL: Impervious Geomembrane**

If required, the geomembrane layer is used to prevent subbase degradation and/or contamination of the underlying soils that may occur due to activities occurring on the mat. The geomembrane layer may need protection with a non-woven geotextile layer on one or both sides.

**OPTIONAL: Drainage System**

If required, a Drainage System is used in areas where surface water may be detrimental to the structural integrity of the overall GEOTERRA system. The complete drainage system provides the required components for soil separation/reinforcement and drainage. Typical areas of use include tropical areas where soils are typically laterite clay soils and subject to high rainfall.

The GEOTERRA Drainage System consists of single-layered, interconnected GEOTERRA Drainage Units to form a continuous drainage mat. The GEOTERRA Drainage Units shall be 25 mm (1 in) minimum depth, have a minimum crush-strength of 1550 kPa (225 psi) and have drainage capacity of 160 l/m/min (12.9 gal/ft/min). Deeper GEOTERRA Drainage Units (50 mm; 2 in depth) may be required in some conditions.

**OPTIONAL: Anchoring**

Occasionally, the GEOTERRA units may require anchoring at specified intervals with stakes or earth anchors specifically designed for the GEOTERRA system. Quantity and spacing of anchor placement is a function of soil type, saturation, loading requirements and application.

**STAKE ANCHORS:**

For some light-weight applications or small platforms, stakes may be used to anchor the assembled GEOTERRA system from shifting due to torsional surface loading.

**EARTH ANCHORS:**

Earth Anchors are recommended to stabilize the GEOTERRA mat system for very large platform installations to control surface deformations.

The GEOTERRA Earth Anchor 800-33 shall have 360 kgf (800 lbf) resistance against pullout (may vary with soil types, saturation and density) and 0.84 m (33 in) cable length. The earth anchor is made from a steel cable with a formed (stamped) steel anchor head at one end and a tensioning loop at the other end. A washer and cable stop move freely along the cable.

