

TENSARTECH® STRATUM™

CELLULAR FOUNDATION MATTRESS SYSTEM
FOR FOUNDATIONS WITH CONTROLLED SETTLEMENT



➤ Tensor® offers a broad variety of cost effective and attractive alternatives for all types of construction projects over weak ground.

Tensor Technology – Proven Practical Solutions and the Know-How to Get them Built

TensorTech® systems are based on Tensor Technology and the proven performance of Tensor geogrids. Tensor Technology is widely adopted for ground stabilisation problems and reinforced soil structures, delivering real savings in cost and time. We can help you apply Tensor Technology to deliver the best value on your project.



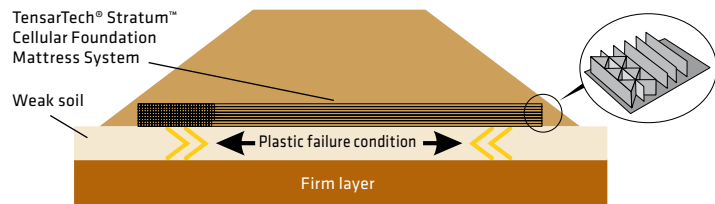
Increased Foundation Stability Allowing Controlled Settlement

The TensorTech® Stratum™ Cellular Foundation Mattress System (formerly known as TensorTech Geocell Mattress System) has been used successfully in embankment foundation applications since it was introduced in 1983. A continuous open cellular structure, the Tensartech Stratum System is typically 1 m thick, comprising Tensor uniaxial and TriAx® geogrids.

3 MAJOR BENEFITS WHEN USING TENSARTECH® STRATUM™

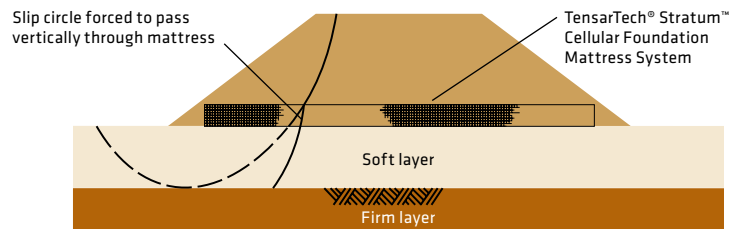
Rapid Construction

1. The TensorTech® Stratum™ System can provide initial construction access onto soft sites and is rapid to assemble. Once filled with coarse gravel, it acts as a stiff platform that provides a stiffened foundation for the embankment allowing even and controlled settlement.



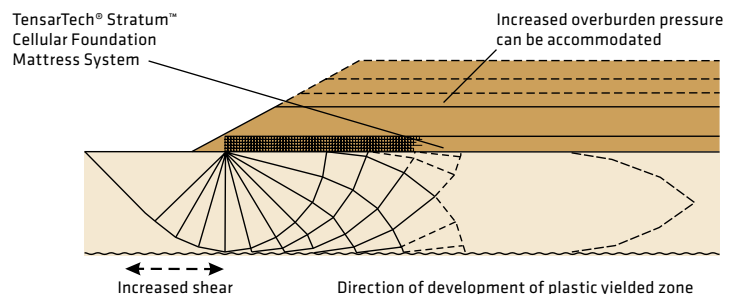
Improve and Increase Stability

2. The TensorTech Stratum System intersects potential failure planes. The rigidity of the cellular foundation mattress system forces the planes deeper into the firm strata below. The critical failure mechanism then becomes that of plastic failure of the soft layer and the stability can be improved.



Reduce Lateral Spread

3. The rough interface at the base of the TensorTech Stratum System reduces lateral spread and also ensures mobilisation of the maximum shear capacity of the foundation soil further increasing stability.





The TensarTech® Stratum™ Cellular Foundation Mattress System provides stiff basal support in the control of differential settlement (A7 Motorway, Holland).

The Right Choice for Rapid Construction and Faster Consolidation

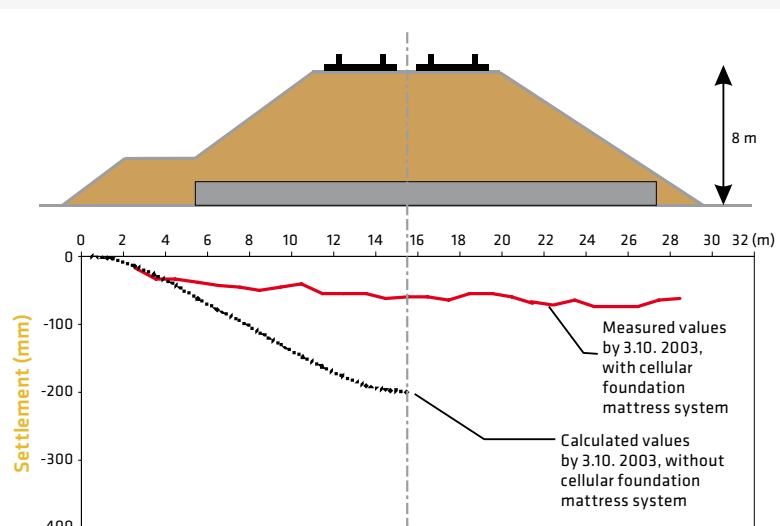
WORKING AND PRACTICAL ADVANTAGES OF TENSARTECH® STRATUM™:

- ▶ Provide stability of the foundation without the need for piles or other ground improvement measures
- ▶ Allow safe access to site and the forming of a working platform
- ▶ Avoid excavation and replacement of the soft soil
- ▶ Prevent loss of drainage fill into the weak foundation
- ▶ Provide even and controlled settlement
- ▶ Allow faster consolidation
- ▶ Accommodate vertical band (wick) drain installation if consolidation needs to be further accelerated

RAILWAY EMBANKMENT, SENKVICE, SLOVAKIA

The ability of the TensarTech® Stratum™ System to control differential settlement and achieve rapid consolidation has been demonstrated in a railway embankment (reported by Jenner et al, ref. The use of cellular foundation mattresses as the foundation of road and rail embankments, Proceedings of the BGA International Conference on Foundations, Dundee, Scotland 24-27 June 2008. IHS BRE Press, 2008).

Instrumentation demonstrated that settlement was even and consolidation rapid. The TensarTech Stratum System resulted in just 30% of the calculated settlement value that was predicted without the geocell.



Comparison of actual settlement measured with the cellular foundation mattress system and the calculated settlement predicted without the cellular foundation mattress system.



1. The base of the cellular foundation mattress system is quickly formed by unrolling geogrids onto the formation.



2. Rapid site assembly of the TensarTech® Stratum™ System.



3. Approved fill is carefully machine placed into the cells and requires no compaction.

TensorTech® Stratum™ Cellular Foundation Mattress System Offers Many Practical Applications and Solutions to Construction on Weak and Difficult Soils

ROAD AND MOTORWAY EMBANKMENTS OVER WEAK AND WET GROUND



Proven application of the TensorTech® Stratum™ System to stabilise and drain the base of an embankment (Kasposmero, Hungary).

EMBANKMENTS OVER WEAK SUB STRUCTURES WITH HIGH LEVELS OF GROUND WATER



Proven application of the TensorTech® Stratum™ System for construction of an access road over very soft and wet ground conditions (Northumberland, UK).

COMMERCIAL UNITS CONSTRUCTED ON VARIABLE GROUND AND WASTE DEPOSITS



Proven application of the TensorTech® Stratum™ System controlling differential settlement when building over landfill (Elstow, UK).

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Contact Tensar or your local distributor to receive further literature covering Tensar products and applications.

Also available on request are product specifications, installation guides and specification notes.

The complete range of Tensar literature consists of:

- ▶ **Tensar Geosynthetics in Civil Engineering**
A guide to products, systems and services
- ▶ **Ground Stabilisation**
Stabilising unbound layers in roads and trafficked areas
- ▶ **TriAx[®]: A Revolution in Geogrid Technology**
The properties and performance advantages of Tensar[®] TriAx[®] geogrids
- ▶ **Asphalt Pavements**
Reinforcing asphalt layers in roads and trafficked areas
- ▶ **TensarTech[®] Earth Retaining Systems**
Bridge abutments, retaining walls and steep slopes
- ▶ **Railways**
Mechanical stabilisation of track ballast and sub-ballast
- ▶ **Foundations Over Piles**
Constructing over weak ground without settlement
- ▶ **Basal Reinforcement**
Using Basetex high-strength geotextiles
- ▶ **TensarTech[®] Stratum[™]**
Cellular foundation mattress system for foundations with controlled settlement
- ▶ **Erosion**
Controlling erosion on soil and rock slopes