



Tensartech Geocell Mattress System

**Tensartech system for
constructing foundations
with controlled settlement**



Tensor Technology - proven practical solutions and the know-how to get them built

Tensartech 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.

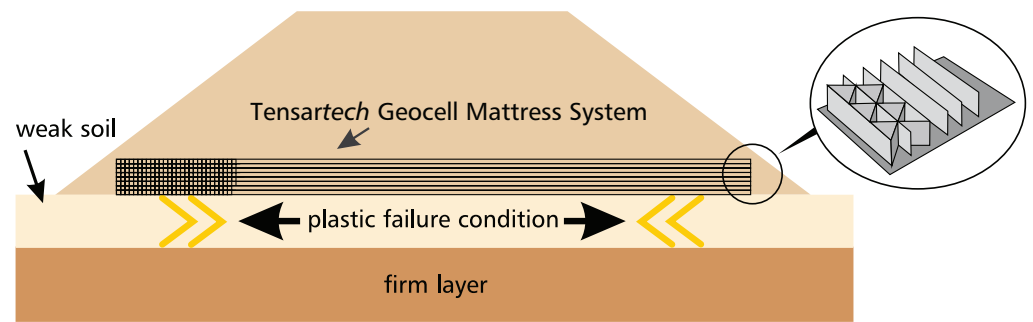
Increased foundation stability allowing controlled settlement

The Tensartech Geocell Mattress System has been used successfully in embankment foundation applications since it was introduced in 1983. A continuous open cellular structure, the Tensartech Geocell Mattress System is typically 1m thick, comprising Tensor uniaxial and biaxial geogrids.

3 major benefits when using Tensartech Geocell Mattress System

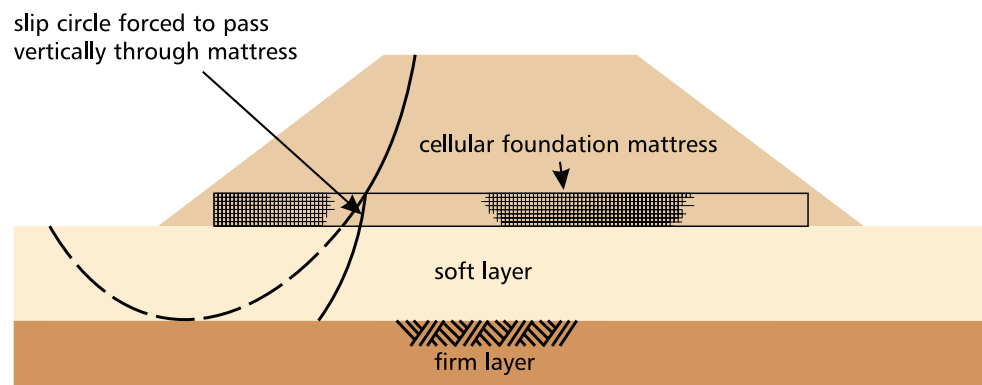
Rapid Construction

1. The Tensartech Geocell Mattress 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.



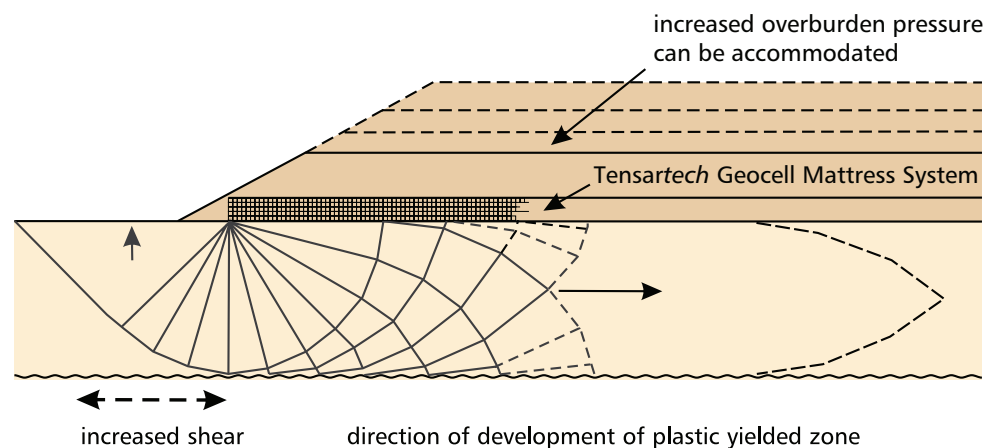
Improve and Increase Stability

2. The Tensartech Geocell Mattress System intersects potential failure planes. The rigidity of the Tensartech Geocell 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 a Tensartech Geocell Mattress System reduces lateral spread and also ensures mobilisation of the maximum shear capacity of the foundation soil further increasing stability.





1. The base of the Geocell is quickly formed by unrolling geogrids onto the formation

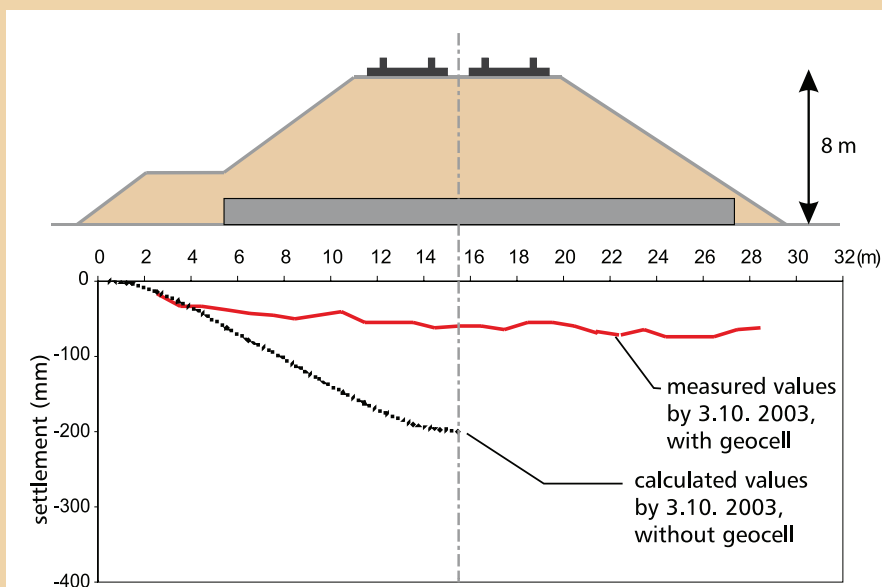


2. Rapid site assembly of Tensartech Geocell Mattress System

The right choice for rapid construction and faster consolidation

Working and practical advantages of Tensartech Geocell Mattress System can:

- 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



Comparison of actual settlement measured with the Tensar Geocell and the calculated settlement predicted without the Geocell

Railway Embankment, Senkvice, Slovakia

The ability of a Tensartech Geocell Mattress 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 geocell 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 Geocell Mattress System resulted in just 30% of the calculated settlement value that was predicted without the geocell.



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



The TensarTech Geocell Mattress System provides stiff basal support in the control of differential settlement on the M74, UK.

Tensartech Geocell 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 a Tensar Geocell to stabilise and drain the base of an embankment (Kaposmero, Hungary)

Embankments over weak sub structures with high levels of ground water



- Proven application of a Tensartech Geocell Mattress 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 a Tensartech Geocell Mattress System controlling differential settlement when building over landfill (Elstow, UK)

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

Also available on request are case studies, installation guides and specification notes.

The complete range of Tensar literature consists of:

- **Tensar Geosynthetics in Civil Engineering** A guide to the products and their applications
- **Ground Stabilisation** Reinforcing unbound layers in roads and trafficked areas
- **TriAx™ - A Revolution in Geogrid Technology**
The properties and performance advantages of the Tensar TriAx™ geogrids
- **Tensartech Earth Retaining Systems**
- **Foundations over Piles** Constructing over weak ground without settlement
- **Basal Reinforcement** Constructing embankments over weak ground
- **Railways** Mechanical stabilisation of track ballast and sub-ballast
- **Asphalt Pavements** Reinforcing asphalt layers in roads and trafficked areas
- **Erosion** Controlling erosion on soil and rock slopes

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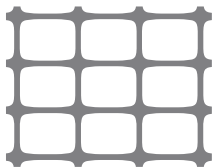
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