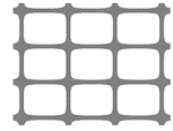




## **Reducing Carbon Footprint**



**Tensar**  
INTERNATIONAL

**TriAx**<sup>™</sup>

### **Tensar TriAx<sup>™</sup> Geogrid**

#### **Reducing the Carbon Footprint with Tensar Products, Services and Systems**

Worldwide concern for energy use and the associated carbon dioxide, (CO<sub>2</sub>), emissions has been increasing over recent years. The UK Government has committed to reducing the present level of CO<sub>2</sub> emissions by 20% by 2010. In 2007, a UK government planning policy statement stated that the design of any future development should be carried out to limit the quantity of CO<sub>2</sub> emissions associated with the materials, the construction activity and the operation of the development.

The use of Tensar TriAx geogrid within a mechanically stabilised layer for trafficked areas enables reductions in aggregate layer thickness, reducing the quantities of aggregates used, the volume of subgrade to be excavated, (where applicable), and the number of vehicles visiting site: all of which equates to a saving in CO<sub>2</sub> emissions. These savings in materials and transport need to be balanced against the cost, in terms of CO<sub>2</sub> emissions, arising from the manufacture of Tensar TriAx and then delivering the product to site.

Net savings in CO<sub>2</sub> emissions of up to 50% can be achieved with a Tensar TriAx mechanically stabilised layer when compared with traditional methods.

### **Reducing Carbon Footprint**

Tensar International is committed to reducing its CO<sub>2</sub> emissions as part of the "Company Energy Policy". Tensar Manufacturing Ltd is committed to increasing energy efficiency by 5% as well as decreasing CO<sub>2</sub> emissions by 5% by 2010. In addition to this, the company has made a commitment to increase investment in clean, energy efficient technologies by 10% by 2010.

Tensar's "Environmental Policy Statement" states that "Tensar is fully committed to incorporating an effective environmental management system to meet the requirements of ISO 14001:2004 in all areas of its business activity".

As well as clearly stating its commitments, Tensar has set out climate change agreement targets with the UK Government Ministry responsible for the environment (DEFRA) going forward to 2010, which are to culminate in a 13.9% saving in CO<sub>2</sub> emissions over the base year.

As well as stating objectives and agreeing targets, real initiatives are taking place in the Tensar factory which have already successfully achieved CO<sub>2</sub> reductions.

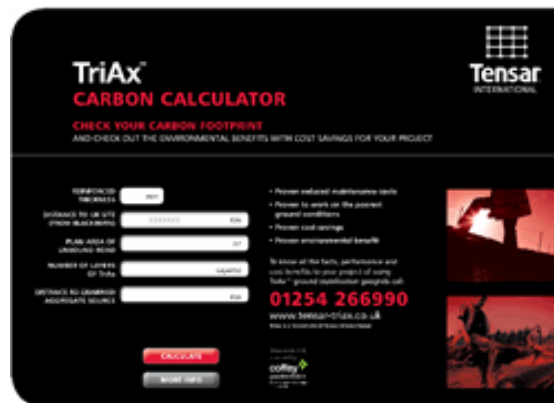
- The recycling operations for 2007 led to a saving of 45 tonnes of CO<sub>2</sub>
- A new energy efficient lighting system, installed in March 2008 is assessed as saving 268 tonnes of CO<sub>2</sub> per annum
- A gas fuel saving project, completed in June 2008, is assessed as saving 109 tonnes of CO<sub>2</sub> per annum
- An employee training programme for all Tensar personnel, completed in Jan 2008, has raised awareness of sustainability issues.

## Tensar Carbon Calculator

The Tensar Carbon Calculator can be used to estimate the percentage saving in CO<sub>2</sub> available by using Tensar TriAx to stabilise an unbound road or sub-base with a reduced thickness of aggregate when compared with a traditional unreinforced unbound road. The Tensar Carbon Calculator is designed to be used with a Tensar Application Suggestion, to enable the user to compare the potential savings in CO<sub>2</sub> with traditional forms of construction. Inputs required include:

- Distance to the site from Blackburn, Lancashire (for TriAx geogrid delivery)
- Thickness of the reinforced unbound layer
- Plan area of stabilisation in the project
- Number of layers of TriAx geogrid
- Distance from site to the quarried aggregate source

The calculator has been developed and checked by Coffey Geotechnics. A full set of assumptions is available in a separate document entitled "Tensar Carbon Footprint Calculator". The Tensar Carbon Calculator can be viewed at [www.tensarsustain.co.uk](http://www.tensarsustain.co.uk).



## Summary

The use of Tensar TriAx within a mechanically stabilised layer enables reductions in aggregate layer thickness which can lead to reductions in CO<sub>2</sub> emissions of up to 50% when compared with traditional methods.

Tensar Manufacturing Ltd have agreed Climate Change Agreement targets with DEFRA. These targets are driven by the company's:

- Environmental Policy
- Energy Policy
- ISO 14001 Certification, procedures and objectives.

## References

1. Sustainability and Construction, published by the Chartered Institute of Building, 2003.
2. Securing the Future – UK Government Sustainable Development Strategy, published by HM Government, March 2005.
3. Carbon Footprinting, An Introduction for Organisations, Published by the Carbon Trust, August 2007.
4. Planning Policy Statement: Planning and Climate Change, Supplement to Planning Policy Statement 1, Published by HM Government, December 2007.

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