



Tensar®

**ROADS AND
PLATFORMS**

Tensar's temporary platform provided a safe working area for the piling and diaphragm walling rigs.

Safe, stable, economical

A Tensar-designed working platform, incorporating TriAx geogrid, delivered significant time and cost savings on construction of a tunnel portal on London's Crossrail project.

CLIENT'S CHALLENGE

Hochtief Murphy JV needed to contract a temporary platform over very weak alluvium, to provide a safe working area for piling and diaphragm walling rigs building the north portal of Crossrail's Thames Tunnel. The JV wanted to avoid casting an expensive temporary reinforced concrete slab, which would have to be removed once foundations were complete.

TENSAR SOLUTION

Tensar's platform design incorporated TriAx geogrid in a layer of recycled granular fill, to create a mechanically stabilised layer. This efficient load-spread design provided sufficient support for the heavy plant over the weak ground, saving time and money, compared with the reinforced concrete slab alternative.

Crossrail, Woolwich

Subgrade stabilisation

📍 London, UK

BENEFITS

Reducing waste

by Re-using recycled granular fill

Safe working area

over very weak ground

Cost-effective

alternative to reinforced concrete

REF TEN334



Tensor's working platform design, with TriAx geogrid incorporated in recycled granular material.

PROJECT BACKGROUND

Site investigations for the North Woolwich portal of Crossrail's twin bore Thames Tunnel revealed a very thin crust of made ground, overlying considerable (and variable) thicknesses of alluvial clay and peat, with a typical undrained shear strength of just 15kPa.

To cope with this very weak ground, joint venture contractor Hochtief Murphy (HMJV) was faced with having to construct a temporary reinforced concrete slab, complete with box-outs, to allow installation of piles and diaphragm walls for the portal. This would not only have been expensive to build but would have also had to be demolished, removed and disposed of at the end of foundation works.

HMJV approached Tensor for a more cost-effective alternative. Tensor proposed using its TriAx geogrid incorporated with recycled 6F5 granular fill to create a mechanically stabilised layer. The top 300mm of the platform was formed from roller-compacted concrete (at HMJV's request) and a non-woven geotextile separator was placed beneath the platform to control any upward migration of fines.

The 3,000m² working platform met the BR470 load cases from the piling and diaphragm walling rigs. The design was checked by HMJV and approved by Crossrail.

Extensive and large scale research has demonstrated mechanically stabilised layers are an effective alternative approach to designing and building working platforms, as confirmed by the Building Research Establishment's review of BR470 in 2011.

Contractor:

Hochtief Murphy JV

Client:

Crossrail

“The Tensor platform was extremely stable and performed as required, despite the very low strength soils.”

Daniele Santiago

Project Manager

Hochtief Murphy JV

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