

TECHGRID GEOGRID REINFORCED SOIL WALLS
WITH SEGMENTAL PANEL FACING

Project Description

Project : Four Laning of Nagpur-Hyderabad Section of NH-7 from km: 123.00 to 153.00,
Contract Package No.: NS-61 (MH)

Owner : National Highways Authority of India

Contractor : M/s Ideal Road Builders Pvt. Ltd., Mumbai

Consultant : M/s. BCEOM-AARVEE Associates, New Delhi



RSRW at Nagpur-Hyderabad Section



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Salient Features of the Reinforced Soil Walls

- Wall Facing Area:* 11781 Sqm
- Wall Height:* 13.0 m Maximum
- Soil Reinforcement:* TechGrid knitted & PVC coated polyester Geogrids with Tensile Strength Of 40 to 250 KN/m
- Facing:* Segmental Panel Facia
- Design Methodology:* BS 8006 (Static); FHWA-NHI-00-043 (Seismic)
- TFIIL's scope of work:* Detailed engineering design and drawings, supply of geogrids, supply of moulds for casting of panels, supervision of construction

The Project

IRB Ltd has awarded the work of Reinforced Soil Retaining Wall to M/s TechFab (India) Industries Ltd. The scope of work include, design of reinforced soil wall, their approval, submission of drawings, supply of moulds and supervision at site. The selection of panel facia is also as per the client requirement, for that newer mould has been made to have a corrugation finish at the front face.

The Challenge

Size of the panel has been selected by the client, i.e. 1.25m x 0.6m. It has been decided to use this panel with PET Geogrid with friction / tongue and groove connection. Designs must be checked for the connection strength for this type of panel-Geogrid arrangement.

The Solution

Testing has been done at IIT-Madras for the friction based connection for Techgrid-PET with this panel type. Design has been checked and verified with consideration of test results and ensured the tension in Geogrid is less than the available connection strength at particular normal pressure.

Table-1 shows the property of the reinforced infill, retained fill and foundation soil taken into consideration in the designs.

Table-1

Property/Fill	Cohesion (C) - KN/m ²	Angle of Internal Friction (ϕ) - Degrees	Unit Weight (γ) - KN/m ³
Reinforced Infill Soil	0	34	20
Retained Soil	0	34	20
Foundation Soil	0	30	18

The design of the walls was carried out using the FHWA-NHI-00-043 guidelines and comprised checks for external, internal and global stability under static and seismic conditions. Construction of the wall was carried out under the supervision of TechFab India Industries Ltd.

The project was successfully completed in February 2010.

For further details kindly contact:

TechFab India Industries Ltd.
711/712, Embassy Centre,
Nariman Point, Mumbai - 400021
Phone: 022-2287 6224/6225 Fax: 022- 2287 6218
Email: anant@techfabindia.com
Web: www.techfabindia.com