

CASE HISTORY

Rev:01, Date : 01.06.2020

**FOUR LANING OF NAGPUR - HYDERABAD SECTION OF NH-7 FROM
KM. 123.000 TO 153.000, CONTRACT PACKAGE NO. NS-61, MAHARASHTRA
MAHARASHTRA, INDIA**



RS Wall with Segmental Panel facia

Client:	Products used:
NATIONAL HIGHWAYS AUTHORITY OF INDIA (NHAI)	•TECHGRID KNITTED & PVC COATED POLYESTER GEOGRID WITH TENSILE STRENGTH OF 40 TO 250 KN/m •NONWOVEN GEOTEXTILE
Main contractor:	
M/s. IDEAL ROAD BUILDERS PVT LTD., MUMBAI	
Manufacturer & Supplier:	Year of construction:
TECHFAB (INDIA) INDUSTRIES LTD.	FEBRUARY 2010

Project description:

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.

Project Challenges:

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.

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.



Photo 1 : Elevation view of Nagpur-Hyderabad Section

Salient Features of the Reinforced Soil Walls :

- Wall Facing Area: 11781 Sqm.
- Wall Height: 13.0m Maximum
- Soil Reinforcement: TechGrid knitted & PVC coated polyester Geogrids with Tensile Strength of 40 to 250 KN/m
- Facing: Segmental Panel Fascia
- Design Methodology: BS 8006: 1995 (Static Condition)
FHWA-NHI-00-043 (Seismic Condition)
- TFIL's scope of work: Detailed Engineering designs & drawings, supply of Geogrids, supply of Moulds for casting of Panels & Supervision of construction

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.



Elevation view of RS wall



Elevation view of RS wall

Conclusion:

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

Tel: + 91- 22 - 2287 6224 / 6225 Fax: + 91- 22 - 2287 6218

E: info@techfabindia.com

W: www.techfabindia.com