

## CASE HISTORY

Rev:01, Date : 24.05.2020

### STRENGTHENING AND WIDENING OF ROAD AT PALANPUR - SWAROOPGUNJ PACKAGE ON NH-14, GUJARAT GUJARAT, INDIA



#### RS Wall with Segmental Panel facia

Client:	Products used:
NATIONAL HIGHWAY AUTHORITY OF INDIA (NHAI)	TECHGRID KNITTED & PVC COATED POLYESTER GEOGRID WITH TENSILE STRENGTH OF 40 TO 250 KN/m NONWOVEN GEOTEXTILE
Main contractor:	
L&T ECC DIVISION, AHMEDABAD	
Manufacturer & Supplier:	Year of construction:
TECHFAB (INDIA) INDUSTRIES LTD.	NOVEMBER 2009

#### Project description:

L & T ECC Ltd. has awarded the work of Reinforced soil 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. There are approaches for ROB, flyovers and vehicular underpass for reinforced soil work. Total stretch for the project is starts from the Palanpur in Gujarat state to Swaroopgunj in Rajasthan state, India.

#### 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:

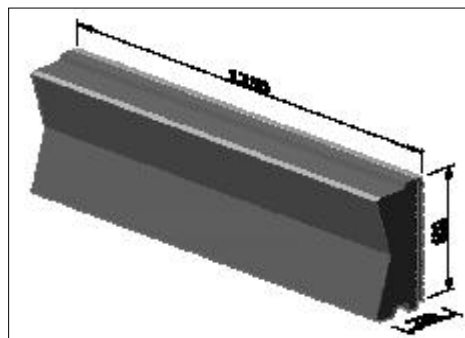
Testing has been done at IIT-Madras for the friction based connection for Techgrid-PET with this panel type. Design has been checked and verified with consideration of test results and ensured the tension in Geogrid is less than the available connection strength at particular normal pressure.



Photo 1 : Elevation view of RS wall

### Salient Features of the Reinforced Soil Walls :

- Wall Facing Area: 55,349 Sqm.
- Wall Height: 10m
- 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: Detail designs & drawings, supply of Geogrids, Moulds for Segmental Panels, Nonwoven Geotextile & Supervision of construction



**Isometric view of Segmental Panel**

Property/Fill	Cohesion (C) - KN/m <sup>2</sup>	Angle of Internal Friction (φ) -	Unit Weight (γ) - KN/m <sup>3</sup>
Reinforced Infill Soil	0	35	20
Retained Soil	0	35	20
Foundation Soil	0	30	18

The design of the walls was carried out using the BS 8006: 1995 for Static Condition & FHWA - NHI-00-043 for Seismic Condition, which comprised checks for external, internal and global stability under static and seismic conditions. Construction of the wall was carried out under TechFab India Industries Ltd's supervision.



**Photo 2 : Elevation view of RS wall**



Photo 3 : Elevation view of RS wall

**Conclusion:**

The project was successfully completed in November 2009.

**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](mailto:info@techfabindia.com)

W: [www.techfabindia.com](http://www.techfabindia.com)