

CASE HISTORY

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GROUND IMPROVEMENT USING GEOCELL FOR TRUCKS PARKING AREA AT VENKATESHWARA FIBRE UDYOG FACTORY, BANGALORE BANGALORE, KARNATAKA, INDIA



Ground Improvement

Client:	Products used:
SRI VENKATESHWARA FIBRE UYOG PVT LTD.	• TECHCELL GEOCELL (150 X 356) TYPE • TECHGEO NON WOVEN GEOTEXTILE
Main contractor:	
Manufacturer & Supplier:	Year of construction:
TECHFAB (INDIA) INDUSTRIES LTD.	2022

Project brief:

Sri Venkateshwara Fibre Udyog Pvt. Ltd. is a Natural Fibre based products manufacturing company located near Bangalore, Karnataka. The factory ships the coir based products daily and number of trucks are parked for loading daily on the parking area.

There was a problem faced during the truck movement in the parking area. The tyres of heavy loaded truck used to settle/sink and this problem gets even worse during rainy season. This issue used to case lot to hindrance to daily delivery activities of the factory. The soil strata encountered at parking area and surrounded area of this site is relatively weak.

Solution:

A stable platform is of utmost importance to the smooth movement of trucks in the parking / loading area. This eases out the daily timelines. To achieve this objective and with due consideration to foundation characteristics especially during rainy seasons, it is therefore decided to stabilize the platform using geocell filled with GSB material. Before installing the geocell, it is proposed to install a non-woven geotextile as separation layer which shall prevent the intermixing of foundation soil and GSB material and at the same time allow the water to pass through. The geocell shall improve the bearing capacity of foundation soil and minimize the differential settlements. The perforation of Geocell also take care of the drainage function allowing free draining of rainwater.



Photo 1 : During Construction

Characteristics and product details of proposed solution are mentioned below :

Techcell Geocell :

Techcell Geocell is the 3D-Honeycomb like cellular confinement system created, made from High Density Polyethylene stabilized with carbon black which has higher tensile strength and stiffness. Techcell Geocell of 150x356 size is used for ground improvement application.

TechGeo Nonwoven Geotextile :

TechGeo nonwoven geotextiles are manufactured from PP staple fibers, which are mechanically bonded through needle-punching to form a strong, flexible and dimensionally stable fabric structure, with optimum pore sizes and high permeability.

This layer of nonwoven geotextile used for separation, filtration, and better drainage.



Photo 2 & 3 : Installation of TechGeo Nonwoven Geotextile

Execution on site :

- Loose topsoil was removed and surface was prepared without any undulations and sharp objects
- A layer of TechGeo nonwoven geotextile was installed. The geotextile layer separates the GSB and existing soil and improves the site's drainage.
- Above TechGeo Nonwoven Geotextile a confining layer of Techcell Geocell 150mm X 356mm was laid which was filled with GSB and compacted to a thickness of 200mm.
- After the completion of GSB layer, the surface was prepared by using stone dust and levelled.



Photo 4 & 5 : Expansion of Techcell Geocell & Filling of Geocell with GSB



Photo 6 : Filling of Techcell Geocell with GSB

Conclusion:

The project is completed successfully and the client was very satisfied with product quality.

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