

CASE HISTORY

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IMPROVEMENT TO TASGAON-KAVTHE MAHAKAL ROAD SH-155 KM 4/000 TO 4/300, TAL-TASGAON, DIST-SANGLI, MAHARASHTRA
SANGLI, MAHARASHTRA, INDIA



Soil Stabilization

Client:	Products used:
PUBLIC WORKS DEPARTMENT, SANGLI	TFI TGB-40
Main contractor:	Quantity supplied:
GURUPRASAD CONSTRUCTION COMPANY	
Manufacturer & Supplier:	Year of construction:
TECHFAB (INDIA) INDUSTRIES LTD.	

Problem:

Tasgaon - Kavthe Mahakal Road SH-155 Km 4/000 to 4/300, Tal-Tasgaon, Dist-Sangli passes through rich black cotton soil having a very low CBR value. The road was subjected to heavy vehicular traffic intensity because of State Highway and was also surrounded by the irrigable land on both sides. With the onset of monsoon the road got heavily water logged and due to the existence of the black cotton soil and high traffic intensity certain stretches of road got heavily distressed with significant settlement, unevenness & fatigue cracks. Black cotton soil contains montmorillonite mineral, because of which the soil becomes very slushy when in contact with water and gets brittle on drying. These alternate cycles of wetting and drying makes the highly unsuitable for any type of construction. Flexible pavement designed over this type of soil requires very high crust thickness, which makes it uneconomical.

Public Works Department, Sangli thereby awarded the Improvement of Tasgaon-Kavthe Mahakal Road SH-155 Km 4/000 to 4/300, Tal-Tasgaon, Dist-Sangli respectively.



Compaction of Subgrade



Laying of TGB-40

Solution:

TechFab (India) Industries Ltd suggested the use of TechGrid Biaxial Geogrid TGB 40 for the subgrade stabilization / basal reinforcement of the existing road stretches comprising of black cotton soil, high traffic intensity & water logging.

TechGrid Geogrid TGB Series are manufactured from superior grades of polyester filament yarn with high tenacity, high tensile modulus, low creep and low shrinkage. Yarns with high molecular weight (> 25,000) and low carboxyl end groups (< 30) are used to ensure durability of the Geogrids used in permanent structures.

The grid structure is formed from the yarns using an advanced weft insertion; warp knitting technology employing state-of-the-art warping and knitting machines. This advanced technology ensures a product with uniform structure and consistent properties. The knitted grid is then given high quality polymeric coating using a specially formulated PVC compound. The coating completely saturates and envelopes the polyester yarn bundles forming a protective cover enhancing – dimensional stability of the Geogrid, resistance to installation damage and protection from the environment. Road has been left for traffic after completion of WBM. There is no settlement seen from last one month.



WBM Layer



Compaction

Execution:

The existing road at the said stretches was first dressed to get the required cross slope, over which 200mm of murrum layer was laid. Water Bound Macadam (WBM) consisting of 40/60 metal was laid in two layers for a total of 225mm thickness. TechGrid Biaxial Geogrid TGB-40 was then laid over the prepared surface in a tight condition, so that it can develop the required tension. Burnt Bitumen Macadam (BBM) of 75mm thick and asphalt carpet 20mm thick was laid over the same.

Benefits:

- Improved lateral confinement of aggregates
- Distributes load over a larger area
- Increase in bearing capacity & shear strength of sub grade
- Reduction in sub base thickness
- Increase in life of pavement



Watering on Compacted layer



Prepared Surface

Conclusion:

The Project was successfully completed.

For further details kindly contact :

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