

KANAKA DURGA TEMPLE, VIJAYAWADA, INDIA

Enhancing road infrastructure with a reinforced soil wall



Industry:	Transportation
Application:	Roadways
Location:	India
Product:	MIRAFI® Polyfelt® PEC

Solution

The 22 m (72.2 ft) high wall was divided into two tiers: a 12 m (39.4 ft) tier and a 10 m (32.8 ft) tier, with a 5 m (16.4 ft) offset, designed according to BS8006 standards. The top tier was individually designed to accommodate traffic load, while the

Overview

The Kanaka Durga temple, located on Indrakiladri Hill along the Krishna River in Vijayawada, Andhra Pradesh, India, is a popular religious site that attracts millions of worshippers annually. However, the existing road, constructed in 1969, was insufficient to handle the increasing heavy traffic. To address this issue, Solmax sought technical assistance and utilized their expertise to find an economical solution for widening the road. After careful analysis, it was determined that a segmental retaining wall using **MIRAFI Polyfelt PEC** was the most suitable option compared to alternatives such as building a bridge or excavating the hill.

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CASE STUDY

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bottom tier considered both the full surcharge of 10 m (32.8 ft) and the traffic load from the upper tier. Locally available murum soil with a friction angle of 32 degrees was used as backfill material.

For reinforcement, a composite geotextile was employed, consisting of high-strength polyester yarn incorporated into a non-woven continuous fiber geotextile. This geotextile provided both tensile strength and drainage functionality. The tensile strengths of the reinforcement layers ranged from 50 kN/m (286 lb/ft) to 200 kN/m (1,143 lb/ft).



In this project, the high-strength geotextile reinforcement layers were installed at an inclined angle for improved pullout resistance. Additionally, all reinforcement layers were anchored at the far end in a trench that was backfilled with soil for tensioning.



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