

Rehabilitation of a boundary wall using Gabion Faced Retaining Wall System



Rehabilitation of a boundary wall at Nilkamal production plant

Tamil Nadu, India

A 7m high uncoursed rubble masonry wall (UCR) at Nilkamal production plant collapsed, prompting rehabilitation using TensarTech® Rock Wall system with gabion fascia and uniaxial geogrids.

CLIENT'S CHALLENGE

A section of the UCR wall surrounding the production plant had previously collapsed due to a lack of drainage which weakened foundations. Previous reconstruction attempts had failed due to quick fix solutions which did not address the source of the problem. This resulted in disputes with neighbouring farmers regarding debris encroachment.

TENSAR SOLUTION

Tensar proposed a geogrid reinforced soil wall using uniaxial geogrids with gabion fascia—a proven, economical alternative to conventional reinforced cement concrete (RCC) walls. The complete solution included design, drawings, and on-site supervision, ensuring quality construction appropriate drainage measures. Tensar solution allowed the reuse of salvaged rocks from the failed wall, reduced costs, construction time, and enhanced sustainability.

B E N E F I T S

- **Reduced construction time**
Eliminates need for expensive temporary shoring
- **Simple and swift installation**
Facilitated by Tensar RE500 geogrids & Bodkins
- **Efficient pressure distribution**
maximising load spread on low-bearing capacity soil
- **Cost-effective solution**
Utilises rocks salvaged from failed UCR Wall, reducing material costs

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PROJECT DETAILS

Constructed in

2022

Client

Nilkamal Ltd. Hosur Division

Contractor

North East Construction

Consultant

Innovative Techno Consultants



Image of the UCR Wall that has collapsed due to rain.

Walls and Slopes | No. 536

PROJECT BACKGROUND

The Southern section of the UCR masonry wall surrounding the Nilkamal production plant in Shoolagiri, near Hosur, Tamil Nadu, suffered a collapse, leaving the backfill vulnerable to erosion and sliding. Investigation revealed that during the heavy monsoon rains in 2022, water had deeply percolated into the foundation, eroding the supporting soil due to inadequate drainage arrangements.

This erosion compromised the foundation's stability, leading to the wall's failure. The section has a previous recurring history of collapse which has led to serious disputes with neighbouring farmers due to debris falling onto their farmland. Hence, the situation demanded a permanent, cost-effective solution that could be implemented promptly using available resources. Tensar proposed a geogrid reinforced soil wall using uniaxial geogrid with gabion fascia as the solution.

The gabion fascia system is well-regarded in the region for its proven performance, cost-effectiveness, and aesthetic appeal. Unlike a reinforced cement concrete wall, it eliminated the need for expensive temporary shoring and lengthy construction timelines.

Both the consultant and the client accepted the proposal due to its technical and economic advantages. Tensar also provided comprehensive support by developing a detailed method statement, ensuring efficient construction within restricted spaces without shoring.



The completed gabion fascia TensarTech® Rock Wall.

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