USE OF METAL GABION WALL FOR EARTH RETENTION & PROTECTION WORKS

Project Description

Project: Construction of Gabion Retaining Wall & Gutter for High Velocity Water-way at MadharDevi, Tal Vai, Dist-Satara

Client: MTDC (Maharashtra Tourism Development Corporation, Mumbai)

Contractor: M/s Miracle Engineering & Infra, Pune

Product: Zinc + PVC Coated Gabion

TechGeo Nonwoven Geotextile PR 20

Manufacturer: TechFab (India) Industries Ltd.

Design Concept: TechFab (India) Industries Ltd.

Approach Length: 570 Meter

Approach Height: 2.0m to 4.0m
The Challenge

“Mandhardevi” temple is 400yrs old and situated at 4,650 feet above the sea level, 20Km from Satara. The temple is located in the vicinity of nature, which makes it a popular tourist spot and is well known among Hindus who celebrate Kalubai Jatra in the month of January every year which lasts 10days. Every year approximately 2,00,000 Hindu devotees visit the place. But unfortunately on 25th January 2005, 300 peoples were died because of stampede and fire at Mandhardevi temple in Maharashtra. To avoid such incident in future, to reduce the crowd, MTDC made decision to construct a shopping complex outside temple area, but the complex area was surrounded by small hills of very loose type of soil (murum) therefore protection is to be needed against landslides before construction.

Techfab (India) Industries Ltd submitted a proposal with solution of Gabion Retaining wall on three sides of shopping complex as a retaining structure and to prevent erosion. Also the Gabion wall was planned in such way that it will provide drainage to rain water, coming from hilly terrain. By providing such duel function wall, it protects the human life and their properties at low line area. The submitted proposal compared with the conventional solution of rigid retaining wall and proved to be an economical solution. So Executive Engineer, MTDC, Mumbai approved the proposal during meeting & discussion.

The Solution

Gabion Retaining walls are flexible structures which are very suitable in case of retaining structures for protection, nearby the water body. Gabions can take settlement which may occur in such regions. Walls of varying height (2.0m to 4.0m), was proposed. TechGeo Nonwoven Geotextile PR 20 was placed at the rear end of gabion wall which acts as filter.
CASE HISTORY

Gabion construction is fast and can be done using unskilled labors. Boulders are available in the vicinity, reduced the overall project cost and make the project very cost effective. Excavation for minimum 1 meter depth was carried out in the virgin soil. Any unsuitable soil removed and replaced with good quality soil. Nonwoven Geotextile are used beneath and behind the Gabion wall for filtration purpose. Compacted filling was proposed and being carried out at site. Final batter as per the design was achieved after the completion of the work.

One monsoon passed & the Gabion Retaining Wall & Gutter for High velocity water way proved its application as per department requirements & satisfaction.

TechFab Metal Gabion and TechGeo Nonwoven Geotextile satisfied all the technical parameters for their effective usage. The execution was successfully completed in time. The department was satisfied with the material quality and in time execution of project.

Benefits of TechGeo Nonwoven Geotextile

1. Acts as a “Filter” by preventing the backfill material from being washed out through Gabion face.
2. Acts as a “Separator” between the backfill material and the Gabion facia and thereby prevents the mixing of the tow.

Benefits of TechFab Metal Gabion over Conventional RCC Retaining Wall

TechFab Metal Gabion was suggested for retaining and erosion control purposes in lieu of the conventional R.C.C Retaining Wall for achieving the following advantages:

1. Flexible structure which can accommodate differential settlement.
2. Free draining structure with no pore pressure development behind wall.
3. Easy in construction, as it does not require skilled labourers.
4. Does not require curing time as in case of R.C.C Retaining wall.
5. Eco-friendly, as the vegetation growth over it, is compatible with surrounding environment.
6. Does not corrode under areas which are in constant / partial submergence.
7. Cost incurred is very less compared to R.C.C Retaining Wall and depends only on the local availability of boulders.

For further details kindly contact:

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