



CHENANI NASHRI TUNNEL PORTAL (2017), INDIA

Slope Stability

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Project	Chenani Nashri Tunnel Portal (2017)
Location	Udhampur, Jammu & Kashmir
Country	India
Year of installation	2017
Customer Engineering	N.H.A.I. (National Highways Authority of India) IL&FS Transportation Networks Ltd.

Initial situation

The site was initially proposed to be treated with shotcrete but persistent seepage of water which caused slope failures and cracks on the portals led the concessionaire to go for an alternate solution which does not only stabilize the slopes but also offers a green solution and allows the hydrostatic pressure to disperse. National Highway Authority of India decided to actively stabilize the tunnel portals. A protective measure had to be selected to stabilize the exposed cutting against superficial instabilities, as well as tilts and slides of individual blocks and rockfalls.

The area of the slopes to be treated and protected amounts to a total of 32'000 m² which includes 4 berms and the top path up to a maximum height of ca. 55 m.

Description

The slope stabilization solution consisted of both active and passive protection measures. The flexible slope stabilization system consisting of TECCO[®] System and coir mat, system spike plates and soil nails had been selected.

Each berm is stabilized using rock-bolts of a maximum depth of 20 m in conjunction with high tensile steel wire mesh. Perforated drain pipes, wrapped in geotextile, at an interval of 6.0 x 6.0 m are also installed to allow excess water to pass.

In addition, vertical and horizontal drainage channels are provided to channelize rain and excess water to pass and not accumulate and seep under the slopes. Variable grid patterns of 2.0 x 2.0 m and 2.5 m x 2.5 m are adopted on this project. 32 mm thick, fully threaded rock-bolts were used in this project and total drill length achieved is approximately 11'0000 m.

An additional GBE-500A rockfall barrier line was installed which can absorb impact energies up to 500 kJ.

See also our rockfall project [Chenani Nashri Tunnel Portal \(2\)](#)

Protected object	Road, Infrastructure
Other installed applications	Rockfall Protection
Corrosion protection	GEOBRUGG SUPERCOATING
Stabilized area	32000 m ²
Maximum slope height	70 m
Slope inclination	65 ° - 70 °
Greening	Yes
Erosion control mat	Yes
Exposition	North

For questions please contact our Geobrugg specialist at your side

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