

Tindharia Landslide Kurseong, INDIA



Soil nailing works

General contractor

Joint Venture GPT / SSPL

Customer/Owner

National Highway Wing PW (Roads)
Directorate Kolkata

Engineer

Terre Armée

Freyssinet subsidiary

Freyssinet Products Company (Saint Eusebe)

Others subsidiaries

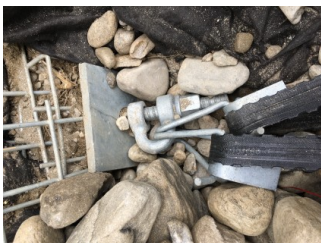
Reinforced-Earth India

Works period

Start date: January 2018
End date: June 2020



General view at half height progress



Connection soil nail/strip

PROJECT DESCRIPTION

A landslide occurred on September 18, 2011, causing the collapse of the road leading to Darjeeling at Tindharia, West Bengal, India. Since then, only the width of the tourist train remains passable, forcing vehicles and trains to run alternately, in both directions, greatly disrupting tourist activity in the region. The owner considered several solutions to treat this problem, finally retaining the Terra-Link solution proposed by Terre-Armée. This solution consists of making an embankment over the entire height of the slide, at the bottom of the road, in order to reconstruct the traffic space at the road level.

The Terra-Link technique consists of nailing the embankment, then creating a stone siding covered with a galvanized steel lattice attached to the heads of nails with strips, and finally filling the space between the embankment and the siding. Pre-stressed ground anchors complement the overall stability. The total height of the embankment is about 100 meters, making it an exceptional structure, one of the highest in the world.

The nails were made with galvanized Freyssi670-E bars and their accessories.

FREYSSINET MISSION

Delivery of approximately 100,000 linear meters of galvanized Freyssi670-E bars, 4,000 nuts and 13,000 couplers, Geomet treated.

KEY SUCCESS FACTORS

Alternative offer, Technical added value

