MACCAFERRI

CASE HISTORY

Rev: 1, Issue Data 10.08.2022

ROCKFALL BARRIER AT MARTABE GOLD MINE, SOUTH TAPANULI

SOUTH TAPANULI, NORTH SUMATERA, INDONESIA

Dynamic Barriers

Problem

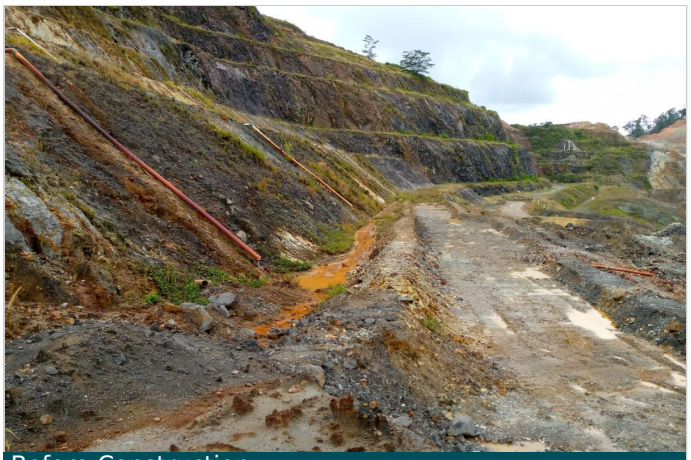
The slopes at an open pit, Martabe Gold Mine – North Sumatera Province are composed of Fractured and Weathered massive quartz veins with the possibility of Rockfall that endanger the activities below. Martabe is located between the subduction in the west and active volcanism along the eastern side of Bukit Barisan. The slopes have an average angle of approximately 45 degrees and a total height of 90 m. A rockfall source was found at 30 - 60 m of height with diameters of 1 - 2 m.
The selection of a proper material was necessary to provide an integrated and comprehensive solution. A Rockfall Mitigation Barrier 750 kJ by Maccaferri Indonesia was selected considering its ability to stop rockfall on the slope with the Service Energy Level (SEL) of 250 kJ and Maximum Energy Level (MEL) of 750 kJ.

Client: PT Agincourt Resources Martabe Gold Mine
Designer / Consultant: PT Agincourt Resources Martabe Gold Mine
Contractor: PT SMN Bangun Nusantara
Products used (Qty.)
- Rockfall - Barrier components 150 m2

Date of construction: 10/2021 - 11/2021

Solution

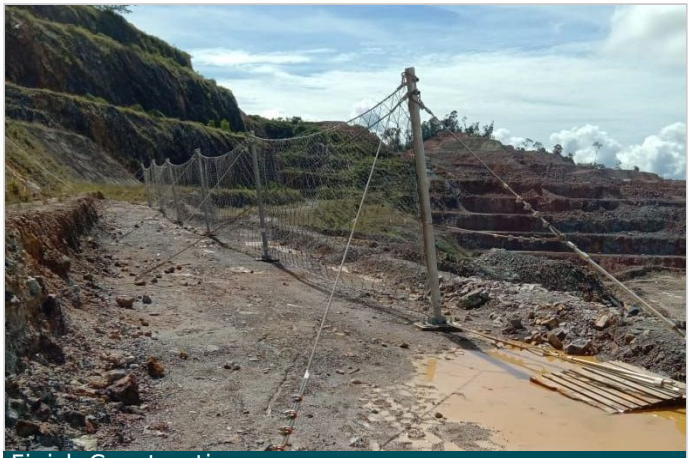
The Rockfall Mitigation Barrier by Maccaferri is certified on “EOTA-EAD 340059-00-0106 - Falling Rock Protection Kits” according to the dynamic impact test on a full-scale barrier sample following instructions provided in “ETAG 027 - Guideline for European Technical Approval of Falling Rock Protection Kits”.
The Rockfall Barrier 750 kJ has a length of 50m, a height of 3m, and net spacing of 10m. The Rockfall Mitigation Barrier 750 kJ was applied by using a combination of square mesh panels (300m x 300m) by Cable Net as interception netting and T-FAST as cable anchor to offer durability and high tensile resistance in demanding load and environmental conditions. The cables are coated in ZnAl5% class A (EN 10244-2, EN 10264-2), the anchor bars and shackles according to EN ISO 1461, fasteners (bolts and nuts) according to EN ISO 10684 and hot-dip galvanized or non-electrolytic zinc flake coated U-bolt wire rope grips.
The Rockfall Mitigation Barrier was designed by considering the following requirements:
• Risk Assessment such as Hazard, Vulnerability, Exposition, and Element at Risk; • Must be able to stop the movement of rockfall by Minimizing or Dissipating Kinetic Energy; • Must be able to stop the bouncing height of rockfall; • Must be able to accommodate Service Energy Level (SEL) and Maximum Energy Level (MEL).



Before Construction

Construction Work

Construction Work



Finish Construction

Finish Construction

PT. Maccaferri Indonesia
Aminta Plaza 2nd Floor, Suite 204
Jln. TB Simatupang Kav.10 Jakarta 12310
Ph: +62-21 750 6555
Fax: +62-21 750 6553
E-mail: info.id@maccaferri.com