CASE HISTORY Rev: 2, Issue Data 06.08.2021

VENETIA MINE CUT S64 SIMPLE DRAPERY ALLDAYS, LIMPOPO, SOUTH AFRICA

Simple Drapery

Problem

Venetia diamond mine was opened in 1992 and forms part of De Beers Consolidated Mines. Venetia Mine, situated near Alldays, is South Africa's larger producer of diamonds.

The open-pit operation is ongoing and safety remains a top priority for the mine, which means rockfall protection measures are of key importance.

Portions of the S64 area is a concern due to the existence of a combination of unfavorable foliation, Tina Lezel shear zone, cracks and highly fractured rock mass that easily disintegrates over time.

The combination of the above issues have resulted in loss of catchment and existence of large blocks with cracks behind in certain portions of this area.

The daily operations are also exposed to rockfall hazards.

The area experienced rock fall events in November 2019.

Solution

Maccaferri Africa were approached by the De Beers to submit a proposal for rockfall protection measures. De Beers indicated that a simple drapery solution is required due to the large size of the blocks to be contained behind the system. The total slope height varied from 50m to 80m.

With information and slope characteristics provided by De Beers, the rockfall protection system was modelled by Maccaferri Africa utilising their rockfall design software, MacRo Studio.

The software was used to determine the strength requirements of the mesh and to further determine the dimension of the anchors and cables necessary to implement the simple drapery solution.

The design confirmed that SteelGrid HR100 would have satisfactory strength properties to contain any rock debris.

The SteelGrid HR100 would transfer the stresses of the falling rocks to the crest cable. The crest cable will then in turn transfer all the stresses to the anchoring system. The purpose of the simple drapery system is for the mesh to contain the debris between the face of the slope and the mesh itself. This limits the velocity of the blocks and guides it to the toe of the slope where the debris can be safely removed from site.

Client: De Beers Consolidated Mines

Designer / Consultant: De Beers Consolidated Mines

Contractor: BKM Holdings

Products used (Qty.)

- Steelgrid HR 16000 m²

Date of construction: 09/2020 - 11/2020



Installed SteelGrid HR100 on slope



Installed SteelGrid HR100 on slope





Installed SteelGrid HR100 on crest





Installed SteelGrid HR100 on slope

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