The Fourth Australasian Ground Control in Mining Conference 2018

Paper Number: 75

Challenges in determining the capacity of mesh

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ABSTRACT

A ground support system is a combination of individual reinforcement and surface support elements that work together to retain and contain the rock mass. The various elements are subjected to external loads and to interactive loading between individual ground support system components. This paper focuses on the challenges in determining the capacity and behaviour of mesh, recognizing that installed mesh can be subjected to several loading mechanisms.

Field observations from underground hard rock mines demonstrate that there are multiple types of damage and modes of failure of mesh. However, these are difficult to reproduce in a laboratory environment. A critical review has shown that existing mesh laboratory testing rigs reproduce very limited loading conditions that may not be representative of underground conditions. This has significant implications in quantifying and extrapolating the performance of mesh to ground conditions.