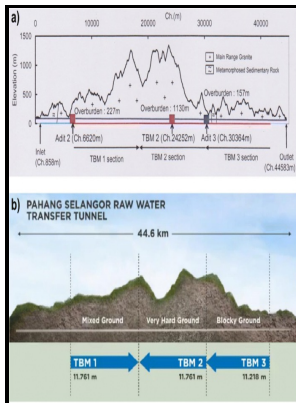


Correlation of Laboratory Cutting Data with Tunnel Boring Machine Performance.

s.n - Studying the Effect of Tunnel Depth Variation on the Specific Energy of TBM, Case Study: Karaj



Description: -

- Correlation of Laboratory Cutting Data with Tunnel Boring Machine Performance.

- Report of investigations (United States. Bureau of Mines) -- 7883 Correlation of Laboratory Cutting Data with Tunnel Boring Machine Performance.

Notes: 1

This edition was published in 1973



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Tags: #Correlation #of #rock #cutting #tests #with #field #performance #of #a #TBM #in #a #highly #fractured #rock #formation: #A #case #study #in #Kozyatagi

Tunnel boring machine performance prediction with scaled rock cutting tests

However, on the basis of the assumptions reported in Table and the TBM characteristics selected, MET par and MCBT gripper show comparable mechanical and geological-geotechnical factors. Therefore, a three-dimensional model theory of rock breaking and an edge angle design theory of transition disc cutter are proposed to overcome the flaws of the currently used TBM cutter heads, such as short life span, camber wearing, tipping.

MECHANICAL TUNNEL BORING PREDICTION AND MACHINE DESIGN

In particular, hard rock TBMs usually operate close to their limits of thrust and rotational speed in massive rock contexts Rostami , whereas an excessively high level of thrust in jointed rock mass implies a significant increase of wear and breakages on the cutterhead and cutters, resulting in a decrease of the utilization factors and hence of the advance rate Delisio and Zhao. The most prevalent joint sets are substantially arranged on the schistosity or parallel to the tunnel axis. To illustrate the applicability of this energy method, data from on-site Qinling tunnel boring are analysed in detail as an example.

Numerical study to estimate the cutting power on a disc cutter in jointed rock mass

Given the importance of this process, tunnel engineers should understand the complexities of shield tunneling parameters.

Tunnel boring machine performance prediction with scaled rock cutting tests

Both values are then combined to a drilling rate index DRI. The complexity and low tolerance for error in urban underground environments makes tunneling an ideal operation for real time monitoring. In this regard, deterministic approaches are normally employed, providing results in terms of average values expected for the TBM performance.

[PDF] Design and Optimization of Tunnel Boring Machines by Simulating the Cutting Rock Process using the Discrete Element Method

Beijing: China Water Power Press, 2006. Moreover, considerable differences in cutterhead and cutter characteristics may also involve a variation of FPI Rispoli.

CORRELATION OF LABORATORY CUTTING DATA WITH TUNNEL

In Gripper TBMs without a partial shield Open TBM , the friction losses depend basically on the resistance force generated by the front shoes of the cutterhead Wittke.

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