Geological limits in roadheader excavation - four case studies Geologische Grenzen beim Teilschnittmaschinen-Vortrieb - vier Fallstudien

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Abstract:

Usually the main subject in preliminary site investigations prior to tunnelling projects is the prediction of tunnel stability. During the last years in mechanical excavation, problems have occurred also connected with the accurate prediction of excavation rates in hard rock. Every now and again problems have been encountered leading to high bit consumption and low cutting performance of roadheaders. In this paper the connection between some geological features, cutting performance and bit wear are presented using four German case histories in different geological settings.

Resume:

D'ordinaire lors d'etudes preliminaires aux grands projets de percement de tunnel, les pronostics sur la stabilite de l'excavation se trouvent au premier plein d'interet. Ce pendant ces demieres annees les difficultes de prevoir correctement la resistence des roches lors de percement mechaniques. Encore des problems revenaient en connexion avec la consommation des ciseaux et avec le progres de couper de bas avec des machines de percement. Dans cet bulletin, sont exposees les correlations fondamentales entre quelques proprietes geologiques, le progres de couper et l'usage des ciseaux, utiliser l'assistance des etudes allemandes en differentes entourages geologiques.

Keywords: Aitenbergtunneilldar-Oberstein; MeisterntulllellBad Wildbad; Sewage Tunnel Zeulenroda; Underground Nilrnberg; The "Law of The Hardest Layer"; The "Law of The Softest Layer"; The "Law of The Representative Sample"; The "Law of the Size Effect"; The "Law of The Geological Diversity".

