

# ROCK MASS CLASSIFICATION PROGRAM IN GUMMERN MINE

**THE CHAIR OF MINING ENGINEERING ASSISTS AUSTRIAN UNDERGROUND MINES IN ROCK MECHANICAL DESIGN AND OPTIMIZATION OF THEIR MINING OPERATIONS.**



In 2017 Omya ramped up their underground operation in the Gummern mine. The Chair of Mining Engineering has been involved in the new underground mine since the early stages of planning. Currently the first mining activities are being monitored and information regarding the rock mechanical performance of the mining system is being gained. The aim of the assistance is to optimize the mining operation from a rock mechanical point of view and to ensure the stability. Besides monitoring the ongoing mining activities the emphasis in 2018 has been on characterizing the rock mass conditions. Therefore an extensive rock mass classification program has been conducted. It comprises visual inspections of different areas, a core drill program, core analyses as well as rock strength tests in the lab.

The stability analyses, the optimization of the design and the mining sequence is based on the

determined rock mass properties. From a scientific point of view the result of the conducted rock mass classification improves the understanding of rock mass parameters and their interrelations as well. The input parameters of different classification systems are analyzed and combined in different ways. The aim is to develop an easier and more objective methodology to determine rock mass parameters. Additionally the focus is on the influence of healed discontinuities on the rock mass behavior. These discontinuities are rather difficult to observe in widely applied visual inspections and are neglected in RQD determination. As a result they are not considered in rock mass classifications frequently. However their influence on the overall rock mass behavior is not fully understood and therefore of great interest.



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