

FRAGMENTATION INTERACTION WITH UNDERGROUND MINING SYSTEMS AND PRODUCTIVITY

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ABSTRACT

Optimization of blast fragmentation in underground hardrock mining requires analysis of its effects on loading and haulage equipment, together with the downstream materials handling system, with the objective of minimizing total mine operating costs. A methodology is reported which has been developed to quantify the actual fragmentation and equipment performance in the field. This is data which has seldom been practicable to capture nor received serious attention in mines. Based upon the experience gained in underground studies, a prototype standard is proposed which aims to summarize the pertinent data, collection and analysis for fragmentation assessment. This relates to parameters of direct measure, such as mean size and distribution, as well as muckpile and work environment. The paper concludes by defining the impact of fragmentation on the loading and downstream handling system.