

## عنوان مقاله:

A New Technical and Economic Model to Calculate Specific Charge and Specific Drilling Using Hole Diameter, Bench Height, Uniaxial Compressive Strength, and Joint Set Orientation

## محل انتشار:

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## نویسندگان:

A. Ghanizadeh Zarghami - *Department of Mining Engineering, Science and Research Branch, Islamic Azad University, Tehran, Iran*

.K. Shahriar - *Department of Mining and Metallurgy Engineering, Amir Kabir University, Tehran, Iran*

K. Goshtasbi - *Department of Mining Engineering, Faculty of Engineering, Tarbiat Modares University, Tehran, Iran*

A. Akbari Dehkharghani - *Department of Petroleum, Mining and Material Engineering, Central Tehran Branch, Islamic Azad University, Tehran, Iran*

## خلاصه مقاله:

Calculation of the specific charge and specific drilling before a blasting operation plays a significant role in the design of a blasting pattern and the reduction of the final extraction cost of minerals. In this work, the information from the Sungun, Miduk and Chah-Firouzeh copper mines in Iran was assessed, and it was found that there was a significant relationship between the specific charge and specific drilling and the hole diameter, bench height, uniaxial compressive strength and joint set orientation. After finding a technical and economic model to calculate the specific charge and specific drilling, this model was tested on the Sungun copper mine. Due to the insufficient consideration during the design of a blast pattern and because of the high hardness of the rocks in some parts of the mine, lots of destructive events such as boulders, back break, bench toe, high specific charge and high specific drilling, fly rock, and ground vibration in the blast operations were observed. The specific charge and specific drilling were found to be the most important technical and economic parameters involved in designing a blasting pattern, and they were found to play an important role in reducing the blasting cost. The blasting cost could be largely controlled by the accurate examination and computation of these parameters. An increase in the rock strength and the angle between the bench face and the main joint set would increase the specific charge and specific drilling. On the other hand, a specific charge and a specific drilling would decrease when the hole diameter increased in every range of the uniaxial compressive strength.

## کلمات کلیدی:

Specific Charge and specific Drilling, Hole diameter, Height bench, Uniaxial compressive strength, Joint set orientation

## لینک ثابت مقاله در پایگاه سیویلیکا:

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