Calculation of the number of rock drills

How do you calculate specific drilling & specific charge?

Calculation of Specific Drilling and Specific Charge are in the program based on Rock Volume per Blast. In turn the Rock Volume is based on Width of the Blast,which means the distance between the first and last hole in a row,or between a free surface and the last hole in the row.

What is the difference between drill rate and volume of rock?

The volume of rock, or drill rate, is the product of both (Figures DP-1a and -1b). Indentation depths are not large, and most of the volume of rock removed is from rotation and the distance the cutters slide per minute.

What determines a drill rate?

The drill rate that can be achieved with a specific bit is de-termined by the aggressiveness of its design, the weight on bit (WOB) applied, the rotations per minute (RPM) and the rock strength. When the RPM or WOB are increased, the rate of penetration (ROP) should increase proportionate-ly. If the increase is proportionate, the bit is eficient.

How do you estimate drilling production?

There is rotation so the bit strikes rock with each blow. The first step in estimating drilling production is to make an assumption about the type of equipment which will be used. That first assumption will be guided by the type of rock to be drilled. Both Tables 2 and 3 give information that is useful in making such a decision.

Does rock strength affect drill rate?

When operating eficiently,rock strength and bit aggressive-ness efect the drill rate,but large changes in drill rate are usually due to ineficiency or dysfunction in the rock cutting process. If the bit is eficient,it is only necessary to raise the WOB or RPM in order to drill faster.

How many ft per hour can a rotary percussion drill drill?

From field i l drilling il tests it was determined that a direct drilling rate of 120 ft per hourcould l be achieved i with a 3 1/2 HD bit on a rotary percussion drill @100 psi. The drills to be used take 10-ft steel. The blasting pattern will be a 10 X 10-ft grid with 2 ft of sub-drilling required.

The determination of adequate number and sufficient depth of boreholes is critical to gather enough data for the design and construction of geostructures such as foundations, bridges, ...

Drilling formulas To know how to calculate drilling speeds and feeds is critical for successful drilling. In this section you find the drilling formulas and definitions needed for your drilling ...

Estimating penetration rates of Jumbo drills is crucial for optimizing underground mining drilling processes, aiming to reduce costs and time. This study investigates various ...

Calculation of the number of rock drills

The mine rock blast hole data collected from the intelligent drilling rig is stored in files, and a database is established for storage and further management and application of ...

RATES OF DRILLING ROCK The rates of drilling rock will vary with a number of factors such as: 9The type of drill and bit size, 9Hardness of the rock, 9Depth of holes, 9Drilling pattern, ...

Drilling is the process of making holes into hard surfaces like rock. In surface mining, drilling is used for blast hole drilling, core drilling for exploration, and technical drilling. Rotary blast hole ...

Example 1 A contractor plans to use dynamite that has specific gravity of 1.3 to open an excavation in granite rock. The drilling equipment available will drill a 3-in blasthole. Dynamite ...

Drilling is the process of making holes into hard surfaces like rock. In surface mining, drilling is used for blast hole drilling, core drilling for exploration, and ...

Explanation Calculation Example: The torque required for a drilling operation is a measure of the rotational force needed to turn the drill bit. It is calculated using the formula T = ...

The rock strength calculated in the above equation is the rock strength, at the bit operating conditions, at the bottom of the hole. In ordinary drilling operations, the mud weight are higher ...

Discover the ultimate guide to Drilling Rate of Penetration (ROP). Learn how to optimize ROP for faster, more efficient drilling and significant ...

The present work-shop brings together those involved globally in the construction of tunnels in rock, underground caverns, and underground space technology using the drilling and blasting ...

While the relative rock hardness has an effect both on drilling and explosives performance, environmental factors exert their influence as well. Among the factors to consider in studying ...

The Speeds and Feeds Calculator may be employed for calculations of estimated speeds and feeds (RPM and IPM) values on the basis of the parameters you have currently set based on ...

Reading time: 1 minute What is RQD (Rock Quality Designation)? Rock Quality Designation (RQD) is a measure of quality of rock core taken from a borehole. ...

Rock drilling tests: the Sievers" Miniature Drill test The design of an underground excavation includes the delicate phase of estimating the drillability of the ...

Key words: drilling and blasting (BVR), explosive, fracture zone, collapse zone, fracture zone, fracture radius,

borehole, face, mine working. 1. Methods, the calculation of which is based on ...

Burden (m) Spacing (m) Bench Height (m) Number of Holes (integer) Hole Properties Stemming (m) Angle (°) [vertical = 0°] Sub Drill (m) Diameter (m) Explosive Properties Av. Inhole Density ...

The drilling engineer, whatever his/her educational background, must work closely with the drilling contractor, service contractors, and compli-ance personnel, as well as with geologists, ...

The minimum number of drills needed is calculated as shown in Table 4. From Table 4, it can be seen that using three drills one of each class leads to very ...

This model is based on blast pattern expansion with automatic adjustment of the burden, spacing, stemming, sub-drilling and number of holes in order to guarantee the production demands in ...

Find drilling formulas and definitions needed for your drilling operations, such as how to calculate cutting speed, feed per revolution and specific cutting force.

The information regarding drill-rig performance that you need to know is: (a) total hours drilling and total hours of downtime during each shift; (b) total number of holes drilled; (c) total footage ...

1.5 Specific Drilling/Charge Calculation of Specific Drilling and Specific Charge are in the program based on Rock Volume per Blast. In turn the Rock Volume is based on Width of the Blast, ...

Metric Simple Pattern PropertiesBurden (ft)Spacing (ft)Bench Height (ft)Number of Holes (integer)Hole PropertiesStemming (ft)Angle (°) [vertical = 0°]Sub Drill (ft)Diameter ...

There are many types of drills: some are powered manually, others use electricity (electric drill) or compressed air (pneumatic drill) as the motive power. Drills with a percussive action (hammer ...

? Go Back... Imperial Simple Pattern Properties Staggered Pattern Square/Rectangular Pattern Burden (m) Spacing (m) Bench Height (m) Number of Holes (integer) Hole Properties ...

Drilling and blasting are all about putting the right amount of energy in the right place at the right time at minimum cost to achieve maximum ...

Calculation Example: Drilling engineering calculations are essential for planning and executing drilling operations. These calculations help engineers determine the size and ...

A great blast starts long before the first hole is drilled. Proper blast design ensures efficient rock breakage, cost control, and--most ...

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