

RINGKASAN

Pengeboran dalam kegiatan penambangan digunakan antara lain untuk pembuatan lubang ledak, pembuatan lubang bukaan dan pengeboran inti batuan. Kecepatan pengeboran dipengaruhi oleh dua faktor yaitu faktor internal dan faktor eksternal. Faktor internal yang mempengaruhi kecepatan pengeboran adalah faktor drillabilitas batuan. Sedangkan faktor drillabilitas batuan dipengaruhi oleh sifat batuan meliputi bidang diskontinu, sifat fisik dan sifat mekanik. Sementara itu, faktor eksternal yang mempengaruhi kecepatan pengeboran antara lain geometri pengeboran, umur dan kondisi mesin bor serta keterampilan operator mesin bor. Oleh karena itu perlu dilakukan penelitian untuk mengetahui seberapa besar pengaruh sifat batuan terutama nilai kuat tekan uniaksial batuan terhadap kecepatan pengeboran.

Penelitian mengenai pengaruh kuat tekan uniaksial terhadap drillability batuan dilakukan pada permodelan gypsum dimana permodelan dibuat menggunakan gypsum yang sudah dikalsinasi dibentuk sesuai ketentuan conto pengujian

Pengujian di laboratorium yang dilakukan antara lain pengujian sifat fisik, pengujian sifat mekanik, pengujian sifat dinamik serta brittleness test dan drill test. Data yang diperoleh dihubungkan dan dikaji untuk mengetahui pengaruh sifat mekanik yaitu nilai kuat tekan uniaksial terhadap kecepatan pengeboran batu andesit dengan parameter drilling rate index (DRI).

Berdasarkan hasil pengujian dilaboratorium diketahui bahwa permodelan gypsum dengan kemiringan bidang perlapisan (α): 0° , 30° , 45° , 60° , dan 90° memiliki drilling rate index sebesar 75,84; 77,12; 75,34; 75,64; dan 74,85.

ABSTRACT

Drilling in mining activities is used, among others, for the manufacture of explosive holes, opening and opening of rock core drilling. Drilling speed is influenced by two factors: internal and external factors. Internal factor affecting drilling speed is rock drillability factor. While the rock drillability factor is influenced by the properties of rocks include discontinuous fields, physical properties and mechanical properties. Meanwhile, external factors affecting drilling speed include drilling geometry, drilling machine age and condition as well as skill of drilling machine operator. Therefore it is necessary to do research to find out how big the influence of rock properties, especially the value of uniaxial strength of rock against the speed of drilling.

A study of the effect of uniaxial compressive strength on rock drillability was performed on gypsum modeling where the modeling was made using calcined gypsum formed according to test requirements

Testing in the laboratory conducted among others testing of physical properties, testing of mechanical properties, testing the dynamics and brittleness test and drill test. The data obtained are connected and studied to determine the effect of mechanical properties that is the uniaxial compressive strength on the speed of andesite rock drilling with the drilling rate index (DRI) parameter.

Based on the results of laboratory testing it is known that gypsum modeling with slope of the (α): 0 °, 30 °, 45 °, 60 °, and 90 ° fields has a drilling rate index of 75.84; 77,12; 75,34; 75,64; And 74.85.