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ADAMSON, MG HOLMAN BROS. LTD. CAMBORNE, GB
Mechanized drilling. 11F.
MIN. MAG. V129, N6, 1973, P521-524.
Drilling developments in the field of small section tunnel driving are outlined. The traditional and still by far the most widely used technique for hard rock tunnel driving is drilling holes with pneumatically operated rock drills and blasting. Blasting methods and techniques are continually being improved and the field of rock drilling with air-driven machines has recently also been undergoing major advances.

635

WILDERMAN, GH
Exploration drilling techniques used as a field determinant and data gatherers in mill and plant design. 5F, 6T, 1R.
CAN. INST. MIN. METALL. BULL. V66, N740, 1973, P11-116.
Dual wall pipe drilling techniques have played an important role in mineral exploration and can now be used as a tool in mill and plant design, as well as in the operation of a producing mine. As a field determinant the system produces a large amount of data, recorded on permanent charts in analogue form. Many values, reflecting geological structure, ore variations, rock drillability, groundwater and others are readable directly from the charts. Other geological and engineering requirements for mine plant design and operation are discussed.

636

ANONYMOUS
Subterrene rock melting. 1F.
TUNNELS AND TUNNELLING, SEPT-OCT. 1973, P471.
A short report is presented outlining the basic principles behind the rock-melting Subterrene. The rock melting penetrator is described and its various uses, including punching precision holes in rock or soil for structural anchors and quietly sinking glass-lined stabilized holes for foundation piles are discussed.

Blasting

See also abstract: 572.

637

WILD, HW
The importance of an optimum diameter of borehole and cartridge for blasting operations. In German. 8F, 3T, 1OR.
GLUECKAUF, V109, N24, 1973, P1196-1201.
The author underlines the influence of the cross-section of roadways and the strength of the rocks on the result of blasting. Trials with larger diameters of cartridge have been carried out in U.S.A., France and West Germany. The results are summarized as follows: In French coal mines 40 mm cartridges have been used very successively giving 25% time saving as compared to 25 mm cartridges. In German industry the difference was even more evident amounting to time saving in the range of 30 to 40%. The relationship of borehole diameter to cartridge diameter is discussed.

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BERGER, FR
Blasting controls and regulations. 2T.
MIN. CONGRESS J. V59, N11, 1973, P48-51.
Regulations limiting the ground and airborne effects of blasting are appearing at an ever increasing rate. Such restrictions cannot help but affect mine operators. The recommendations of investigations in this field are reported and current regulations are discussed.



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STEWART, DH BATELLE LABS. RICHLAND, WASH. USA
BURNHAM, J BATELLE LABS. RICHLAND, WASH. USA
Flowshare stimulation of geothermal systems; DEP. NAT. TECH. INF. SERV. BNWL-SA-4259, 1972, 9P.
The economics and feasibility of using nuclear explosions for recovering geothermal energy from natural and dry hot rock sources are reviewed.

Crushing and grinding

640

BAUMGARDT, S
BUSS, B
MAY, P
Comparison between various methods for the breakage of a single particle. In German. 9F, 14R.
POWDER TECHNOL. V8, N3-4, 1973, P107-115.
Investigations are reported concerning the probability of breakage in single-particle crushing under slow compression, double impact and high velocity impact. Auth:

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KELSALL, DF
STEWART, PS
WELLER, KR
Continuous grinding in a small wet ball mill. Part V. A study of the influence of media shape. 12F, 2T, 8R.
POWDER TECHNOL. V8, N1-2, 1973, P77-83.
The influence of change in grinding media shape on the grinding behaviour of trace quantities of quartz within an environment of calcite in a small continuous wet ball mill has been studied using steel spheres, cubes, long, short and equicylinders, and hexagonal "cylinders". Simulated grinds using the dynamic model of breakage and the appropriate experimentally determined breakage function, rate functions and distributions of residence time showed that spherical media handled the greatest throughput and produced the most closely sized product. Auth:

Rock and soil improvement techniques

Bolts and anchors

See also abstract: 530.

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NEELY, WJ TECH. SOIL SURV. BRAMLEY, TRANSVAAL, ZA
STUART, JG QUEENS UNIV. BELFAST, GB
GRAHAM, J ROYAL MILITARY COLL. KINGSTON, ONT. CD
Failure loads of vertical anchor plates in sand. 14F, 2T, 27R.
J. SOIL MECH. FOUND. DIV. V99, SM9, 1973, P669-685.
A series of tests is described on model anchor plates in sand. The results are presented in the form of dimensionless force coefficients and shape factors relating failure loads to the geometry of the anchor and its depth of embankment. The method of stress characteristics is used to produce comparable theoretical values which agree well with experimental results at both model and field scales.