

Grouting

884258

Assessment of grouting efficiency in a rock mass in terms of seismic velocities

Turk, N; Dearman, W R

Int Assoc Engng Geol Bull N36, Oct 1987, P101-108

Analysis of the seismic velocity of a rock mass before and after grouting may be used to assess the effect of grouting on rock mass properties. By analysing seismic velocity data (Knill, 1970) according to the time average equation, it is shown that the relation between field seismic fracture index and field P wave velocity is best represented by a curve, which is extended to include water saturated and grouted rock masses. The results are used to produce a reference diagram which may be used for grout efficiency determination.

884259

Acoustic emission monitoring on foundation grouting for rock masses

Ueda, T; Nakasaki, H

Proc 6th International Conference on Rock Mechanics, Montreal, 30 Aug-10 Sept 1987 V1, P569-572. Publ Rotterdam: A A Balkema, 1987

Excessive grout injection pressures can lead to hydraulic fracturing of foundation rock masses and create more problems than grouting solves. Laboratory and field tests have been carried out to classify rock behaviour on injection, using water injection tests with acoustic emission monitoring of the fracture processes. A new grouting technique based on this work is proposed.

884260

Simulation of grouting in jointed rock

Hassler, L; Stille, H; Hakansson, U

Proc 6th International Conference on Rock Mechanics, Montreal, 30 Aug-10 Sept 1987 V2, P943-946. Publ Rotterdam: A A Balkema, 1987

A technique to measure the rheological properties of grout fluids, using a rotational viscometer connected to a microcomputer, is described, and preliminary results using cement-bentonite mixtures are presented. A numerical model to simulate grouting has been developed which considers the jointed rock mass to be a mesh of one dimensional channels, and may be expanded to 3-d. At present the model can only simulate a situation where no water gradient is present. Comparisons with physical model tests show good correlation.

884261

Resin grouting as an alternative support method in adverse geotechnical conditions

Szwedzicki, T

Proc SANGORM Symp: Design of rock reinforcing: components and systems, Johannesburg, 13 Nov 1987 P13-18. Publ Johannesburg: South African National Group on Rock Mechanics, 1987

The use of resin grouting to stabilise a heavily jointed rock mass during excavation is discussed. The types of resin available, urethane, epoxy and urea-formaldehyde, and the injection of the resin through boreholes to bond the rock blocks together are described. Laboratory tests on the effects of resin grout on increased strength, and a numerical analysis to calculate the length and spacing of grout holes are included. Case studies in a longwall roof and a roadway are presented.

884262

Hydraulic situation of the subsoil at the Pueblo Viejo Dam (Guatemala)

Ewert, F K

Proc 5th International Congress International Association of Engineering Geology, Buenos Aires, 20-25 October 1986 V2, P1245-1257. Publ Rotterdam: A A Balkema, 1986

Grouting of dam foundations on karstic limestone is described. An extended grout curtain was installed, but, although close spacing was used, it was not certain that all openings had been reached and filled, or that cavities containing volcanic ash were completely filled. Piezometers, also serving as drainage holes, were installed. Results of monitoring are summarised, and interpreted and related to original water routing, groutability, grout takes, and reduction of hydraulic pressure.

Reinforced earth

See also: 884321

884263

Laboratory pull-out tests using bamboo and polymer geogrids including a test study

Bergado, D T; Bukkanasuta, A; Balasubramaniam, A S
Geotext Geomem V5, N3, 1987, P153-189

Laboratory direct shear and pullout tests were used to investigate interaction between soils and geogrids. The geogrids and the clayey sand and weathered clay backfill are materials widely available in Thailand. Results indicate interaction depends on soil grid adhesion and on the bearing capacity of the soil in front of all transverse members of the geogrids. A proposed design method gave performance in reasonable agreement with pullout tests. Results were applied to the successful design of a repair to an irrigation canal bank.

884264

Design charts for roads with geotextiles

Holtz, R D; Sivakugan, N

Geotext Geomem V5, N3, 1987, P191-199

Design charts have been developed to determine the required aggregate thickness for geotextile-reinforced roads using the Giroud and Noiray procedure. The charts are for rut depths of 75, 100, 150, 200 and 300mm, with tyre pressures of 480 and 620kPa, and a load of 80kN. The charts can be used for the design of geotextile-reinforced unpaved roads, roadway stabilisation aggregate, and for the first construction lift for embankments on very soft foundations.

884265

Geotextiles for unpaved roads - a review of design procedures

Hausmann, M R

Geotext Geomem V5, N3, 1987, P201-233

Fabrics have been used for roads on very soft subgrades to fulfil one or more of the following functions - separation, filtration, drainage, or reinforcement. Recent design procedures use fabrics to control subgrade failure mode, improve surface load distribution and provide membrane support. Design predictions are compared to field results, and design charts presented. Factors which should be taken into account in design and construction are discussed.

Ground freezing

See: 884347