Deformation characteristics

See also abstract: 16.

20.
VAN EECKHOUT,EM CONT.OIL CO.PONCA CITY,OK.USA
PENG,SS W.VIRGINIA UNIV.MORGANTOWN,USA
The effect of humidity on the compliances of coal mine shales.8F,6T,12R.
INT.J.ROCK MECH.MIN.SCI.GEOMECH.ABSTR.V12,N11,1975, P335-340.

21.
BALIGH,MM MASS.INST.TECH.,CAMBRIDGE,USA
SCOTT,RF CALIF.INST.TECH.,PASADENA,USA
Quasi-static deep penetration in clays.15F,10R.
J.GEOTECH.ENGNG DIV.,ASCE.V101,GT11,NOV.1975,P1119-1133.
Deformations caused by the steady-state penetration of a rigid rough wedge clay are compared with theoretical predictions. It is found that the mechanism of sharp wedge penetration was consistent with the cutting process assumed by the theory. However, the larger the apex wedge the less accurate are the theoretical predictions. The mechanism of blunt wedge penetration is one of compression in which a rigid region of clay moves with the wedge, so that the deformation patterns are difficult to interpret. Measured penetration resistance is in reasonable agreement with the theory. The suitability of plasticity theory to resolve penetration problems is assessed and its deficiencies identified. Auth.

Physico-chemical properties

22.
LEES,G UNIV.BIRMINGHAM,GB
KENNEDY,CK TRANSP.ROAD RES.LAB.BERKS.GB
Quality, shape and degradation of aggregates.5F,1T, 40R.
Q.J.ENGNG GEOL.V8,N3,1975,P193-209.

Compressibility, swelling and consolidation

See also abstract: 38.

23.
CHEN,FH CHEN ASSOC.DENVER,COLO.USA
Foundations on expansive soils.Textbook.Developments in geotechnical engineering,volume 12.
ELSEVIER SCI.PUBL.CO.ISBN 0-444-41393-6,1975,280P.
The first part of this book deals with the nature of expansive soils and the mechanics of soil swelling. The merits of using drilled pier foundations in such conditions are discussed. Other foundation systems eg. pad and mat foundations are considered. In the second part of the book actual case studies of investigations of cracked buildings and remedial measures are presented. The contents are as follows: Part 1, Chapter 1, Nature of expansive soils; 2, Mechanics of swelling; 3, Field and laboratory investigation; 4, Drilled pier foundations; 5, Footing foundations; 6, Slabs on expansive soil; 7, Moisture control; 8, Soil stabilization; 9, Investigation of foundation movement; Part 2, Cases 1. Distress caused by pier uplift; 2, Distress caused by improper pier design and construction; 3, Distress caused by heaving of footing pad and floor slab; 4, Distress caused by heaving of continuous footings; 5, Distress caused by rise of water table; Appendix A-Suggested method of test for one-dimensional expansion and uplift pressure of clay soils; Appendix B-True and false.

Dynamic properties

See also abstracts: 12,33.

24.
SILVER,ML UNIV.ILLINOIS,CHICAGO,USA
PARK,TK SOIL TEST.SERVICES,NORTHBROOK,USA
Testing procedure effects on dynamic soil behavior. 18F,17R.
J.GEOTECH.ENGNG DIV.ASCE,V101,GT10,OCT.1975,P1061-1083.
Cyclic triaxial tests were performed on dry and saturated undrained sands using stage testing methods to investigate the influence of repeated cyclic straining and specimen reconsolidation on equivalent linear modulus and damping values on both a total stress and on an effective stress basis. It was found that: (1) Modulus and damping values for dry sand are not significantly affected by stage testing; (2) damping values are not significantly higher for saturated specimens than for dry specimens; (3) volume changes in saturated specimens induced by stage testing can be severe and can severely change initial testing densities; and (4) modulus values for saturated sands are significantly higher for stage tested specimens than for fresh specimens at the same shear strain levels after the same number of cycles. It was concluded that stage testing methods may not give reasonable values of dynamic soil properties for saturated undrained sands for shear strain levels greater than about 0.1% or for more than about 25 strain cycles. Auth.

25.
PERSEN,LN
Rock dynamics and geophysical exploration - textbook.130F,30T,7R.
ELSEVIER,AMSTERDAM.1975,P276.
This book examines the theoretical and physical basis of the propagation of stress waves in rock and the properties of rock as a wave-transmitting medium that govern the process. Chapters are:- 1. Fundamental equations; 2. Some characteristic features of plane waves (elastic medium); 3. Some characteristic features of spherical waves (elastic medium); 4. Some characteristic features of a cylindrical wave (elastic medium); 5. The harmonic input pulse (elastic medium); 6. Characteristic features of plane waves (Kelvin medium); 7. The spherical wave (Kelvin medium); 8. Experimental study of stress waves in rocks; 9. Experimental results compared with theory. 10. Evaluation of data; 11. Dispersion and particle acceleration: application in the evaluation of data. 12. Surface explosions; 13. Some practical problems; 14. Sensitivity criteria for tunnels. Appendices.

26.
PLOKHOTNIKOV,AN
DZEBAN,IP
A study of the effect of the stress state on elastic wave propagation in wells. 3F,3T,16R.
IZVESTIYA,PHYS.SOLID EARTH,N1,1974,P64-68.

27.
GASKAROV,IV
PARKHOMENKO,EI
The seismoelectric effect in rocks and the preconditions for its application in geological prospecting work. 4F,2T,7R.
IZVESTIYA,PHYS.SOLID EARTH,N1,1974,P71-74.