782008 STRESS-DEFORMATION AND STRENGTH CHARACTERISTICS. STATE-OF-THE-ART REPORT
Ladd, C C; Foott, R; Ishihara, K
Proc 9th International Conference on Soil Mechanics and Foundation Engineering, Tokyo, 1977, V2, P421-494

Reviews the behaviour of soils as presently understood and summarises recent advances in the modelling and computational abilities to predict soil performance. Discusses and evaluates where possible in situ and lab tests and empirical correlations used to obtain the soil parameters required for these predictive procedures, and comments on methods for improving current practice and areas requiring further research.

782009 MECHANICAL PROPERTIES OF SOFT ROCKS
Akai, K; Adachi, T; Nishi, K
Proc 9th International Conference on Soil Mechanics and Foundation Engineering, Tokyo, 1977, V1, P7-10

Reports triaxial tests to investigate the plastic yielding and rate dependent behaviour of porous tuff as an ideal soft sedimentary rock, with the aim of obtaining more general and realistic stress-strain-time relations for soft rocks, especially in relation to long term stability and deformation problems.

782010 STUDY OF MECHANICAL PROPERTIES OF VERY ALTERED ROCK (IN SPANISH)
Giuliani, F; Rodriguez, M; Archilla, F
Proc 5th Panamerican Conference on Soil Mechanics and Foundation Engineering, Buenos Aires, 17-22 Nov 1975, V3, P1-18

Reports direct shear tests, consolidation tests and permeability tests on samples of weathered rock.

782011 TRANSPORTATION, PREPARATION AND STORAGE OF FROZEN SOIL SAMPLES FOR LABORATORY TESTING
Baker, T H W
ASTM STP 599, June 1976, P88-112

782012 SOIL SPECIMEN PREPARATION FOR LABORATORY TESTING. A SYMPOSIUM PRESENTED AT THE ASTM 78TH ANNUAL MEETING, MONTREAL, 22-27 JUNE 1975
ASTM STP 599, 1976, 340P

Contains the text of the 20 papers presented, including some on rocks, frozen soils and earth-rock mixtures.

782013 CONSTITUTIVE RELATIONS OF COAL AND COAL MEASURE ROCKS
Ko, H Y; Gerstle, H
USBM OFR 57-77, Aug 1976, 262P

Strength and stiffness properties of Beehive mine coal were determined, and the material was found to be isotropic. Mechanical, index, and geologic properties of roof and floor coal measure rocks from Beehive mines were measured and correlated. Analytic formulations are given for coal creep under uniaxial loading, while triaxial creep is being investigated. Results of testing of coal model structures are compared with predictions from using several material models.

Avail: NTIS, Springfield, Va, 22161, USA (PB 265365/AS)

782014 SOME ENGINEERING PROPERTIES OF CLAY SHALES
Howley, C M
M Sc & DIC thesis, Imperial College, June 1977

782015 COMPOSITIONAL AND STRUCTURAL ANISOTROPY OF WINNIPEG SOILS - A STUDY BASED ON SCANNING ELECTRON MICROSCOPY AND X-RAY DIFFRACTION ANALYSES
Baracos, A
Can Geotech J, V14, N1, Feb 1977, P125-137

Samples of Winnipeg tan silt, brown clay, grey and plastic clay were examined using X-ray diffraction and the scanning electron microscope (SEM). These same samples from the Winnipeg Floodway test site had been the subject of an extensive investigation by Freeman, who had shown that they were anisotropic in shear strength and permeability. Evidence was obtained that the presence of non-clay minerals in varves, veins, and inclusions in otherwise clayey material was a cause of anisotropy. Clay particle horizontal orientation and the presence of horizontal planes of uniformly graded silt are further reasons for anisotropy. In addition photographic data were obtained of shape, size and grouping of the soil particles.

782016 DATA ACCUMULATION ON SELECTED COAL MEASURES IN THE WARRIOR BASIN OF ALABAMA INCLUDING SEARCH OF UNPUBLISHED REPORTS ON SURFACE FIELD MAPPING
Alabama Geological Survey
USBM OFR 50-77, 16 March 1976, 73P

Data collected on 150 rock joints and 45 coal cleats included attitude, quality, type, spacing, persistence, lithology, bedding thickness, surface texture and filling. Some comparison was made with data from Landsat-1 and Skylab.

Avail: NTIS, Springfield, Va, 22161, USA (PB 265179/AS)

Fracture processes

See also: 782024

782017 SIMPLE TESTING TECHNIQUE FOR FRACTURE UNDER BIAXIAL STRESSES
Radon, J C; Leevers, P S; Culver, L E
Exp Mech, V17, N6, June 1977, P228-232

A mechanical-hydraulic machine for biaxial fatigue and ramp loading of precracked plate specimens is described. Preliminary results show that crack behaviour in polymethyl methacrylate is independent of the stress acting parallel to the crack plane.

Strength characteristics

782018 DESIGN OF A LOADING PLATEN FOR TESTING ICE AND FROZEN SOIL
Law, K T
Can Geotech J, V14, N2, May 1977, P226-271

A critical review of the problems associated with the design of an ideal platen for uniaxial loading tests is presented. A method of design based on an analytical approach is then formulated. The method permits a liberal choice of materials for constructing the platen, which consists mainly of a low modulus plug confined in a metallic ring. A finite element approach has been employed to substantiate the proposed method. Practical design aspects are also discusse