

# TESTING FORUM

## Committee D-18 News

### Standards Activity Within the Subcommittees of D-18

The following report is a summary of the standards activities within the subcommittees of Committee D-18 on Soil and Rock as discussed at the meeting in Lake Buena Vista, Fla. 22-29 Jan. 1982. Contact Main Committee Chairman Adrian Pelzner or Subcommittee Chairmen as listed for further details.

#### *D18.03 Texture, Plasticity, and Density Characteristics of Soils*

CHAIRMAN: DICK LADD

- Standard D 1140 "Amount of Material in Soils Finer than the No. 200 (75  $\mu$ m) Size" revision is almost ready for subcommittee ballot.
- Standards D 423 and D 424 "Liquid Limit of Soils" and "Plastic Limit and Plasticity Index of Soils," respectively, have been revised and are almost ready for subcommittee ballot.
- Standard D 427 "Shrinkage Factors of Soils" is to have a subcommittee ballot for withdrawal.
- Standards being revised are: D 698 "Moisture Density Relations of Soils and Soil Aggregate Mixtures Using 5.5 lb. Rammer and 12. in. Drop" and D 1557 "Moisture Density Relations of Soils and Soil Aggregate Mixtures using 10 lb. Rammer and 18 in. Drop." These should be ready for subcommittee ballot soon.
- The Standard D 1558 "Moisture Penetration Resistance Relations of Fine Grained Soils" needs revision before subcommittee ballot.
- New standards D18.03.81.01 and D18.03.81.02 "Test Method for Minimum Index Density of Soils and Soil Aggregate Mixtures" and "Test Methods for Maximum Index Density of Soils and Soil Aggregate Mixtures Using a Vibratory Table," respectively, have been through subcommittee ballot and negatives have been resolved.
- D18.03.81.04 "Practice for Density and Water Content Corrections for Soil Containing Oversized Particles" has been through subcommittee ballot and negatives resolved.
- New standard for determination of "Density of Cohesive Soils from Undisturbed Samples" is almost ready for subcommittee ballot.
- New standard D18.03.81.07 "Tentative Method for Impact Compaction-Degradation Test" written by Bill Lovell is to be reviewed in subcommittee before ballot.

#### *D18.05 Structural Properties of Soils*

CHAIRMAN: SURENDRA SAXENA

- Revision of D 2850-70 "Test for Unconsolidated Undrained Strength of Cohesive Soils in Triaxial Compression" as a result of a main committee ballot. Only editorial changes were required.
- New Standard "Test Method for One-Dimensional Consolidation Properties of Soils Using Controlled Strain Loading"

D18.05.79.01 was revised editorially as a result of comments received in a main committee ballot.

#### *D18.07 Identification and Classification of Soils*

CHAIRMAN: CHARLES BRITZIUS

- Preliminary activity on D18.07.81.03 "Practice for X-ray Examination of Soil Samples" by Ara Arman. Standard not yet ready for subcommittee ballot.
- Standard D 3282 "Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes" needs significance and use and precision and accuracy statements. Preston Smith has volunteered to do this job, which will allow the subcommittee to ballot the standard.
- D 2487 "Classification of Soils for Engineering Purposes" has been subcommittee balloted. Revision required and rebalot will be instituted, immediately.
- D 2488 "Recommended Practice for the Classification of Soils (Visual-Manual) Procedure" has been extensively rewritten and subcommittee comments are being collected. It will be subcommittee balloted before the June 1982 meeting.
- D18.07.81.01 "Practice for Description of Frozen Soils (Visual-Manual)" has passed Society ballot and should be referred to as D 4083. Some corrections were needed, and were made, subject to subcommittee rebalot.

#### *D18.08 Special and Construction Control Tests*

CHAIRMAN: JAMES TALBOT

- D 2922 "Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)" passed subcommittee ballot.
- D 1556 "Density of Soil in Place by the Sand-Cone Method" received a negative on subcommittee ballot. Standard revised and to be concurrently balloted in subcommittee and main committee.

#### *D18.10 Bearing Tests of Soils in Place*

CHAIRMAN PRO TEM: PETER JARRETT

- Subcommittee will expand scope into nondestructive testing (NDT) standards, particularly for pavement evaluation applications. This includes the various "road rating" systems.
- Subcommittee needs more members to meet the new challenges.
- Mini-mini symposium of informal presentations is proposed for June 1982 meeting; presentations on the following NDT methods to be solicited: (1) Dynaflect, (2) Falling Weight Deflectometer (FWD), (3) Benkelman Beam, (4) Deflection Beam, (5) Road Rater, (6) FHWA Thumper, and (7) (PCI) Pavement Condition Index (Air Force). Subcommittee will likely be renamed and will likely develop a revised and expanded scope. Gilbert Baladi, FHWA and Michigan State University, will be in charge of arrangements for the June 1982 subcommittee meeting. Please contact Gilbert, US DOT FHWA, HRS-14, Washington, D.C. 20590, Phone (202) 285-2062 if you are interested in subcommittee activity.

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- New standard for "Test Method for Bearing Ratio of Soils in Place" D18.10.80.01 has been revised as a result of subcommittee ballot. Ready for Main Committee ballot.

## *D18.14 Geotechnics of Waste Management*

CHAIRMAN: TOM ZIMMIE

- Standard (draft) D18.14.81.01 "Test Method for Distribution Ratios by the Short Term Batch Method," prepared by Donald E. Clark of Brookhaven National Laboratory. Ready for subcommittee ballot soon.
- Standard (draft) D18.14.81.03 "Test Method for the Determination of the Pore Volume Distribution of Soils and Rocks by Mercury Intrusion Porosimetry," prepared by C. W. Lovell of Purdue University. Will be balloted by subcommittee.
- Standard (draft) D18.14.81.05 "Tentative Standard Method for Determining Soil Loss by Sleet and Rill Erosion," prepared by C. W. Lovell, Purdue University. Some additional work needed before subcommittee ballot. This method follows the procedures of USDA Agriculture Handbook No. 537 "Predicting Rainfall Erosion Losses" and the application of the Universal Soil Loss Equation.

## *D18.18 Peats and Organic Soils*

CHAIRMAN: PETER JARRETT

- Symposium on the "Testing of Peats and Organic Soils" to be sponsored by this subcommittee on 23 June 1982 in Toronto, Ontario.
- Standard D 2975-71, "Test for Sand Content of Peat Materials" balloted for withdrawal in subcommittee. No objections.
- New Standard "Test Methods for Bulk Density of Peat and Peat Products" D18.18.81.02 balloted at subcommittee level. Several changes made and planned for rebalot at concurrent level of both subcommittee and main committee.
- The Energy and Chemical Purposes Task Group within D18.18 has generated several draft standards: "Standard Method of Sampling and Fineness Test of Pulverized Peat," "Standard Test Method of Gross Calorific Value of Peat by the Adiabatic Bomb Calorimeter," "Standard Method for Ultimate Analysis of Peat," and "Standard Method for Proximate Analysis of Peat." These drafts are still being reviewed within the subcommittee, except that the first listed is almost ready for subcommittee ballot.
- The Geotechnical Task Group within D18.18 has generated several draft standards: D18.18.81.01 "Tentative Standard Method for Saturated Hydraulic Conductivity of Peat (Constant Head)" by Bill Lovell of Purdue University and "Standard Method of Laboratory Determination of Moisture Contents of Peats" by Anna Burwash of A. L. Burwash Consulting, Ltd. Both of the above are almost ready for subcommittee ballot.
- The Sampling Working Group has generated a single draft standard on "Tentative Standard Method of Measurement of Peat Deposit Thickness" by Bill Lovell, Purdue University. This is essentially ready for subcommittee ballot.

- The Classification Working Group has a draft of "Standard Classification of Peat Samples," by Art Cohen, University of South Carolina. Still in subcommittee review.

## *D18.20 Impermeable Barriers*

CHAIRMAN: IVAN JOHNSON

- This is a new subcommittee with four sections: 20.01 Slurry Walls, 20.02 Flexible Membrane Liners, 20.03 Compacted Earth and Earth Mixture Liners, and 20.04 Hard-Surface Liners. New members are very much needed. Contact Ivan Johnson.
- The subcommittee works very closely with other D-18 subcommittees, for example, D18.19 on Geotextile Applications, as well as similar committees in the American Society of Civil Engineers and the American Society of Agricultural Engineers.
- The Jan. 1982 meeting featured a mini-seminar with illustrated discussions on (a) Slurry Walls, (b) Flexible Synthetic Liners, and (c) Biomass and Anaerobic Digester Ponds. The mini-seminar was followed by meetings of the subcommittee sections, which developed long range plans and objectives.
- The subcommittee plans a seminar for the June 1984 Annual Meeting which will emphasize the types of standards requiring priority development.

—Professor C. W. Lovell  
Purdue University

## **Status of ASTM Standard for Tieback Testing**

A proposed standard for the testing of soil and rock tiebacks is being prepared by ASTM Subcommittee D18.11 on Deep Foundations. State transportation departments recommended that ASTM develop the standard, because a variety of testing procedures are currently being used and there is considerable difficulty in comparing results from one site to another. A standardized test would also improve communications between engineers, contractors, and owners and enable engineers to develop an understanding of tieback behavior.

Persons who are interested in more information about the standard or wish to submit suggestions should contact David E. Weatherby, Schnable Foundation Co., 4720 Montgomery Lane, Bethesda, Md. 20014.

## **ASTM to Write Five New Standards**

Five categories of new standards will be the result of a one-year contract between the Nuclear Regulatory Commission (NRC) and ASTM Committee D-18. The purpose of the contract is to establish standards for testing of rock properties to be used in determining rock behavior when contemplating storage of nuclear wastes in underground chambers.

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According to Howard J. Pincus of the University of Wisconsin-Milwaukee and chairman of Subcommittee D18.12 on Rock Mechanics that will be responsible for this standards development contract, the standards resulting will be applicable to several common types of rock. Without the contract, he added, the development of such standards might have taken up to three years to complete.

Geologists, mining engineers, civil engineers, chemists, and physicists from industry, government, and academia will be contributing to the development of standards contracted by the NRC. Draft standards developed in the five areas will be subject to the ASTM full consensus system for approval.

In situ measurement of elastic properties of rock will be one area of standards development for the project.

A second area of concentration will be thermal conductivity of rock. Included in this task will be the development of standard procedures for laboratory determination in a temperature range that is important for HLW disposal. Thermal expansion of rock will also be considered in the contract. Procedures for heating and methods of measuring strain and temperature will be included. Thermal property measurements of fractured rock will be considered.

Other tasks to be addressed include time dependent deformation of rocks and testing procedures for rock bolts used in repositories.

For further information on the NRC/ASTM standards development program contact Howard J. Pincus, University of Wisconsin-Milwaukee, Department of Geological Sciences, Sabin Hall, Milwaukee, Wis. 53201, (414) 963-4017 or Kenneth Pearson, ASTM Standards Development Division, 1916 Race St., Philadelphia, Pa. 19103, (215) 299-5520.

## Symposium

A symposium on the Design and Performance of Laterally Loaded Piles and Pile Groups is to be held on 15 June 1983 in Kansas City, Mo. It is sponsored by ASTM Subcommittee D18.11 on Deep Foundations. The purpose of the symposium will be to provide a forum for the presentation and discussion of papers pertaining to the design of laterally loaded piles and pile groups, the determination of soil parameters, lateral loading test methods, and case histories of performance. An STP is anticipated by ASTM. For further information on the symposium contact James A. Langer, Gannett Fleming Corddry and Carpenter, Inc., Harrisburg, Pa., (717) 763-7211.

## 2nd International Conference on Geotextiles

The Second International Conference of Geotextiles is scheduled for 1-6 Aug. 1982, at the MGM Grand in Las Vegas, Nev. The conference will center on new products, applications, test methods, and research pertaining to geotextiles. Session topics will include roads, drainage, erosion control, railroads, slopes and embankments, dams, new uses, and standards.

Four days of the conference will be devoted to the presentation of technical papers relating to new developments, research, and unique applications of geotextiles. One hundred and seventy papers have been selected for oral presentation. There will be simultaneous translation into French and English. A special one and one-half day exhibition will feature 127 exhibits of fabrics, related test methods, equipment, field instrumentation, and publications.

The conference is being sponsored by the Industrial Fabrics Association International (IFAI) with the cooperation of the American Society of Civil Engineers (ASCE), the American Society for Testing and Materials (ASTM), Geotechnical Products Association of Canada, the International Union of Testing and Research Laboratories for Materials and Structures (RILEM), Ecole Nationale des Ponts at Chaussees (ENPC), and the Transportation Research Board (TRB).

More information on the conference can be obtained by contacting The Secretary General, Second International Conference on Geotextiles, Industrial Fabrics Association International, 350 Endicott Bldg., St. Paul, Minn. 55101 (612 222-2508).

## Lexicon

A multi-language lexicon of technical terms, symbols, and definitions used in soil mechanics and foundation engineering has been published under the auspices of the International Society for Soil Mechanics and Foundation Engineering (ISSMFE) by the Canadian Geotechnical Society.

The *Lexicon in Eight Languages* is published in hard cover and includes 1592 entries in English, French, German, Italian, Spanish, Russian, Portuguese, and Swedish along with the ISSMFE list of symbols with their definition and units. The price is \$28.50 (U.S.) for members of ISSMFE and \$33.50 (U.S.) for nonmembers. A discount may be obtained for bulk orders. Payment should be made in U.S. funds, payable to the Canadian Geotechnical Society. Copies may be ordered from: Miss Moira Meddings, Canadian Geotechnical Society, Suite 700, EIC Bldg., 2050 Mansfield St., Montreal, P.Q. H3A 1Z2 Canada.