

# TESTING FORUM

## Committee D-18 News

### ASTM Committee D-18 Develops Ground-Water Standards

ASTM Committee D-18 on Soil and Rock develops consensus standards related to exploration for, and quantitative availability of, ground water as it occurs in the soil and rock. The 530-member committee has 20 existing ASTM standards and has at various stages of development 25 draft standards that are useful for investigations of the available supply, potential and existing pollution, artificial recharge, land subsidence, and other problems related to ground water.

The horizontal and vertical extent of the ground water stored within or flowing through the openings contained in the subsurface soil and rock are critical to all of these problems. The standards developed or being developed by eight subcommittees, such as Subcommittee D18.04 on Ground-Water Movement and Hydrologic Properties for Soil and Rock, cover terminology and quantitative methods, such as field and laboratory measurements of permeability, distribution ratio, density of bentonitic slurry for slurry walls, while others relate to exploration techniques, such as auger borings, split-barrel sampling, and electrical resistivity measurements, determining water levels in boreholes and monitoring wells, and moisture and density testing by nuclear meter. The published standards are contained in the *Annual Book of ASTM Standards*, Vol. 04.08.

Persons interested in more information on existing or developing ground-water standards or in participating in the developments should contact A. Ivan Johnson, ASTM D-18 Environmental Representative, 7474 Upham Court, Arvada, CO 80003 (303/425-5610); or Robert Morgan, ASTM 1916 Race St., Philadelphia, PA 19103 (215/299-5505).

### Task Group Assembled to Address Hazardous Waste

A task group has been assembled in Committee D-18 on Soil and Rock at the request of the Environmental Protection Agency to address land-based hazardous waste disposal facility design, construction, and performance monitoring. Engineering tests for earth and ground water contamination from such sites will also be considered. Goals are to establish a matrix of all applicable ASTM standards from Committee D-18 that are relevant to geotechnical testing; develop guidelines or practices for geotechnical tests needed for soil liners for land-based disposal facilities; and review available field testing procedures and technology that would apply to soils testing for land-based disposal facilities. The next meeting will be held during the January 26-30, 1986, meetings of D-18 in Cocoa Beach, FL. Contact: G. David Knowles, O'Brien and Gere Engineers, 1304 Buckley Rd., Syracuse, NY 13221 (315/451-4700); or Robert Morgan, ASTM (215/299-5505).

## Committee D-35 on Geotextiles Organizes New Activity on Geomembranes

A new activity on geomembranes has been organized within Committee D-35 on Geotextiles, which plans to change its name to reflect that addition. The group, Subcommittee D35.10 on Geomembranes, was previously a D18.20 section on flexible membrane liners in Committee D-18 on Soil and Rock. D-35 vice-chairman Ronald K. Frobels notes that D35.10 hopes to gather all standards related to geomembranes into this one group. Subcommittee members will be looking at existing standards that are useful for this technology as well as considering new ones to be developed. This work will be aided by liaison with D-18. The next meeting of D35.10 will be held in conjunction with the January 29-31, 1986, meetings of D-35 in Cocoa Beach, FL. Contact: Ronald K. Frobels, Chemie Linz, 1726 Cole Blvd., Suite 325, Golden, CO 80401 (303/278-4529).

### Awards

The Committee D-18 award presentations for 1985 were made at the June Meeting in Los Angeles. Those receiving awards were as follows:

#### *Mr. William Goodwin, D-18 Honorary Member*

Mr. Goodwin, Tennessee Technological University, Cookeville, TN, a former Chairman of the Board of ASTM, received this honor for his dedicated service to ASTM and Committee D-18 since 1952.

#### *Mr. Amster Howard, Special Service Award*

Mr. Howard, U.S. Bureau of Reclamation, Denver, CO, received the award as a result of his dedicated work as Task Group Chairman of D18.07 on D 2487 and D 2488; also for organizing and operation of courses on visual classification of soils.

#### *Mr. Barry Christopher, Special Service Award*

Mr. Christopher, STS Consultants, Northbrook, IL, received the award for his leadership in establishing Committee D-35 on Geotextiles of which he is presently chairman. The committee was formed from a Joint Subcommittee in D-18 and D-13 on Textiles.

#### *Mr. Lester Kaufman, Special Service Award*

Mr. Kaufman, U.S. Bureau of Reclamation, Sacramento, CA, received the award for long, dedicated service to D-18 and for a concentrated effort on development of D 4253 and D 4254 on Maximum, Minimum, and Relative Density.

#### *Mr. Ernest Winters, Special Service Award*

Mr. Winters, Scnabel Engineering Associates, Bethesda, MD, received the award for dedicated work as section leader of D18.02.07 toward the development of the pressuremeter standard.

### Obituaries

The members of D-18 were saddened by the loss of two of our associates during the period between the Winter and Summer Meetings.

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FIG. 1—Adrian Pelzner (left), chairman of Committee D-18, congratulates Mr. Barry Christopher (right) on the receipt of the ASTM D-18 Service Award at the 1985 June Meeting in Los Angeles.

Mr. Alan R. Woolf, a consultant from Washington, D.C., has been an active member of D-18 as well as D-4 on Road and Paving Materials and E-29 on Particle Size Measurement. He has formerly been Chairman of D18.08 on Special and Construction Control Tests, D18.03.02 on Atterberg Limits, and was Chairman of D18.02.02 on In Place Vane Shear Testing at the time of his death.

Mr. Drew A. Tiedemann, formerly of the U.S. Bureau of Reclamation, Denver, CO, was active in D-18 leadership. He was formerly Secretary of D-18 main committee, was a member of D18.95 on Information Retrieval and Data Automation, and was Chairman of D18.02.10 on Flat Plate Dilatometer.

The D-18 Executive Subcommittee has authorized acceptance of memorials to the D-18 fund in the names of Mr. Tiedemann or Mr. Woolf. Anyone wishing to so contribute should contact Mr. Robert Morgan, the D-18 Staff Manager at ASTM headquarters, 1916 Race Street, Philadelphia, PA 19103.

## Symposium on the Pressuremeter and Its Marine Applications

Developing further understanding of the pressuremeter, its potential, and developing an ASTM standard for pressuremeter tests, are the goals of this second international *Symposium on the Pressuremeter and its Marine Applications*. The symposium, to be held just before the Offshore Technology Conference, is cosponsored by ASTM Committee D-18 on Soil and Rock, the Minerals Management Service/Technology Assessment and Research Program, and the U.S. Army Engineer Waterways Experiment Station.

Four sessions will be held, with one giving particular emphasis to offshore applications. All authors of accepted papers will be given the opportunity to present his/her own paper.

Major symposium topic areas include:

- pressuremeter equipment and insertion technique
- pressuremeter test procedures
- pressuremeter test: theoretical analysis
- obtaining soil mechanics parameters from pressuremeter test results
- foundation design based on pressuremeter results
- use of pressuremeter results for gravity platform
- use of pressuremeter results for pile foundation platforms
- other uses of pressuremeter results in marine geotechnical engineering

A Special Technical Publication (STP) based on the symposium is anticipated by ASTM.

To receive a complete program booklet, including preregistration and hotel reservation cards, contact ASTM Staff Manager Bob Morgan, ASTM Standards Development Division, 1916 Race Street, Philadelphia, PA 19103, 215/299-5505.

For additional technical information, contact one of the Symposium cochairmen: Jean-Louis Briaud, Civil Engineering Department, Texas A&M University, College Station, TX 77843, 409/845-3795; or Jean M. E. Audibert, Earth Technology Corporation, 7020 Portwest Drive, Suite 150, Houston, TX 77024, 713/869-0000.

## Symposium on Geotechnical Applications of Remote Sensing and Remote Data Transmission

An International Symposium on Geotechnical Applications of Remote Sensing and Remote Data Transmission will be held 31 Jan.–1 Feb. 1986 at the Holiday Inn, Cocoa Beach, FL. The symposium is sponsored by ASTM Committee D-18 on Soil and Rock and the International Committee on Remote Sensing and Data Transmission of the International Association of Hydrological Sciences.

The interest in and application of remote sensing and remote data transmission has been increasing in recent years on an exponential scale. The techniques have been applied in many interdisciplinary fields but the geotechnical field has not applied the techniques extensively to date. One purpose of this symposium is to introduce engineers, geologists, and those of other disciplines in the geotechnical field to some of the applications, advantages, and disadvantages of the various techniques. Another purpose is to evaluate the possibility that the science is sufficiently developed so that some standards, possibly of the recommended practice type, could be developed to assist the geotechnical specialist in selecting and using these techniques in the most useful and efficient manner.

The symposium features 15 oral presentations and 2 audience discussion periods. It will be preceded on 28–30 Jan. by the standards development meetings of Committee D-18, at the Cocoa Beach Holiday Inn. All symposium attendees are welcome to attend these meetings.

There is a \$10.00 activities fee to attend the symposium, or a \$25.00 activities fee for those attending both the 31 Jan. symposium and the 1 Feb. field trip to the John F. Kennedy Space Center.

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## TESTING FORUM

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Please note that 5 Jan. 1986 is the preregistration deadline for the symposium and for hotel reservations.

A Special Technical Publication (STP) based on the symposium is anticipated by ASTM.

To receive a complete program booklet with preregistration and hotel reservation cards, contact ASTM Staff Manager Bob Morgan, ASTM Standards Development Division, 1916 Race St., Philadelphia, PA 19103, 215/299-5505.

Additional technical information is available from Symposium Chairman A. Ivan Johnson, 7474 Upham Court, Arvada, CO 80003, 303/425-5610.

### **ASCE Board of Directors Endorses Metrication in Civil Engineering**

In 1984 the ASCE Committee on Metrication (COM) of the American Society of Civil Engineers (ASCE) summarized and analyzed the responses to a questionnaire circulated worldwide by the committee and submitted a report, which subsequently was approved by ASCE Management Group A and the Technical Activities Committee and passed on to the Board of Directors. At the Board meeting during April 1985 in Denver, CO, the Board endorsed recommendations contained in the Committee's report, in essence actively encouraging the early move to the SI metric system in civil engineering activities.

The ASCE/COM developed the questionnaire to determine the use of conventional metric, SI, or other units for civil engineering practice in foreign countries. Starting in Nov. 1983, the 2-page questionnaires were distributed to individual members and to the national committees or secretariats of 21 international organizations related to civil engineering and to a cross section of private consulting offices in approximately 70 foreign countries. The contacts included such organizations as International Association for Bridge and Structural Engineering, International Union of Architects, International Society for Soil Mechanics and Foundation Engineering, Canadian Institute of Steel Construction, Nordic Committee on Building Regulations, International Council on Tall Buildings and Urban Habitat, and International Organization for the Development of Structural Concrete.

Responses to the questionnaires were received from 51 countries, many of the responses were from the national committees or secretariats and thus represent many more people than would be indicated by the number of responses. Of the responders, 70% are now using SI exclusively and an additional 12% anticipate using SI in the

near future. For the final question "Given the choice in your engineering design, which system would you use?", SI was named by 81%, traditional metric by 19%, and other units by none.

The 12-page report by members of COM summarized the questionnaire responses in detail and made recommendations regarding metric practice for ASCE in the United States. The ASCE Board of Directors approved a resolution supporting actively the conversion to the SI (Système International), including use of SI in all cartographic and geodetic projects; all books, handbooks, and catalogs; ASCE publications; and civil engineering instruction. Publication of the complete ASCE/COM report is expected in an early issue of the *ASCE Journal of Professional Issues in Engineering*.

For information regarding COM activities, contact should be made with A. Ivan Johnson, Chairman, ASCE Committee on Metrication, 7474 Upham Court, Arvada, CO 80003.

### **EPA Seeks Volunteers for Permeability Testing Program**

The U.S. Environmental Protection Agency (EPA), Office of Solid Waste, is in the process of standardizing test methods for determining the hydraulic conductivity and chemical compatibility of inorganic linear materials for use in implementing RCRA regulations. Two test devices have been selected for evaluation in a collaborative testing program: fixed-wall permeameters and flexible-wall permeameters. This testing program is necessary prior to promulgating the test methods.

The EPA is soliciting volunteer testing organizations to participate in the collaborative testing. Each laboratory will be requested to perform four tests with each test device, using test methods supplied by EPA and a single clay soil. The tests for each device will include two baseline tests for permeability to water and two tests for permeability to an organic solvent mixture. Participating organizations should be experienced in permeability testing and should be capable of performing tests with both fixed-wall and flexible-wall permeameters. The tests will be run under pressure, and back pressure will be used to ensure sample saturation. The results of the collaborative testing will be made available to the participating testing organizations on the completion of the testing program. In addition, the resulting test methods will be submitted for adoption by ASTM. Organizations interested in volunteering their services for this program should call or submit a letter of intent to: Agnes M. Ortiz, U.S. EPA, Office of Solid Waste (WH-562B), 401 M St., SW., Washington DC 20460; 202-382-4770.

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## SI Conversion Factors for Geotechnical Engineering

During the past several years, Subcommittee D18.93, through the initiative of Marshall Silver, has developed a table of factors for converting U.S. customary and metric units into SI units. The objective is to assist authors in converting their results into SI units and to promote uniformity in the use of SI units in geotechnical engineering. Additional information on the SI system can be obtained from ASTM Metric Practice Guide (E 380) and "SI Units in Geotechnical Engineering," by R. D. Holtz in the *Geotechnical Testing Journal*, Vol. 3, No. 2, June 1980, pp. 73-79. Comments from the profession are invited as letters either to the editor for publication in the journal or to Subcommittee D18.93 for its consideration.

*Ernest T. Selig*  
Technical Editor

To Convert From	To	Multiply By
<b>Length</b>		
inches (in.)	millimetres (mm)	25.4
inches (in.)	metres (m)	0.0254
feet (ft)	metres (m)	0.305
miles (miles)	kilometres (km)	1.61
yards (yd)	metres (m)	0.914
<b>Area</b>		
square inches (in. <sup>2</sup> )	square centimetres (cm <sup>2</sup> )	6.45
square feet (ft <sup>2</sup> )	square metres (m <sup>2</sup> )	0.0929
square yards (yd <sup>2</sup> )	square metres (m <sup>2</sup> )	0.836
acres (acre)	square metres (m <sup>2</sup> )	4047
square miles (miles <sup>2</sup> )	square kilometres (km <sup>2</sup> )	2.59
<b>Volume</b>		
cubic inches (in. <sup>3</sup> )	cubic centimetres (cm <sup>3</sup> )	16.4
cubic feet (ft <sup>3</sup> )	cubic metres (m <sup>3</sup> )	0.0283
cubic yards (yd <sup>3</sup> )	cubic metres (m <sup>3</sup> )	0.765
<b>Mass</b>		
pounds (lb)	kilograms (kg)	0.454
tons (ton)	kilograms (kg)	907
<b>Force</b>		
one pound force (lbf)	newtons (N)	4.45
one kilogram force (kgf)	newtons (N)	9.81
<b>Pressure or Stress</b>		
pounds per square foot (psf)	kilonewtons per square metre (kN/m <sup>2</sup> ) or kilopascals (kPa)	0.0479
pounds per square inch (psi)	kilonewtons per square metre (kN/m <sup>2</sup> ) or kilopascals (kPa)	6.89
kilogram force per square centimetre (kgf/cm <sup>2</sup> )	kilonewtons per square metre (kN/m <sup>2</sup> ) or kilopascals (kPa)	98.1
<b>Liquid Measure</b>		
gallon (gal)	cubic metres (m <sup>3</sup> )	0.0038
acre-feet (acre-ft)	cubic metres (m <sup>3</sup> )	1233
<b>Quantity of Flow</b>		
gallons per minute (gal/min)	cubic metres per minute (m <sup>3</sup> /min)	0.0038
cubic feet per minute (ft <sup>3</sup> /min)	cubic metres per minute (m <sup>3</sup> /min)	0.0283
<b>Mass Density</b>		
pounds per cubic foot (pcf)	megagrams per cubic metre (Mg/m <sup>3</sup> )	0.0160
kilonewtons per cubic metre (kN/m <sup>3</sup> )	megagrams per cubic metre (Mg/m <sup>3</sup> )	0.102

$$\begin{aligned}\text{°F} &= 1.8 \text{ Temp } \text{°C} + 32 \\ \text{°C} &= (\text{Temp } \text{°F} - 32)/1.8\end{aligned}$$



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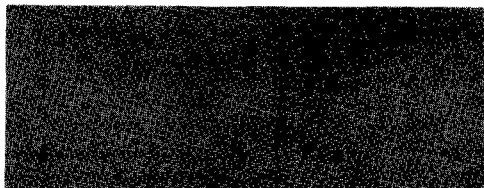
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# ASTM Committee D-18 on Soil and Rock

## Scope

The promotion of knowledge; stimulation of research; the development of specifications and methods for sampling and testing; and the development of nomenclature, definitions, and practices relating to the properties and behavior of soil, rock, and the fluids contained therein. Excluded are the uses of rock for building stone and for constituent materials in portland cement and bituminous paving and structures coming under the jurisdiction of other committees. Included are the properties and behavior of: (1) soil-like materials such as peats and related organic materials, (2) geotextiles, and (3) fluids occupying the pore spaces, fissures, and other voids in soil and rock insofar as such fluids may influence the properties, behavior, and uses of the soil and rock materials.

## Officers

**Chairman:** Adrian Pelzner, U.S. Agricultural Forest Service, Engineering Div., P.O. Box 2417, Washington, DC 20013.

**First Vice-Chairman:** Robert C. Deen, University of Kentucky, Kentucky Transportation Research Program, Transportation Research Bldg., Lexington, KY 40506.

**Second Vice-Chairman:** R. E. Gray, GAI Consultants, 570 Beatty Rd., Monroeville, PA 15146.

**Third Vice-Chairman:** W. G. Shockley, 326 Lake Hill Dr., Vicksburg, MS 39180.

**Secretary:** R. J. Stephenson, U.S. Army Corps of Engineers, South Atlantic Division Lab., 611 So. Cobb Dr., Marietta, GA 30060.

**Membership Secretary:** R. S. Ladd, Woodward-Clyde Consultants, 1425 Broad St., Clifton, NJ 07012.

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#### **D 18.02 Sampling and Related Field Testing for Soil Investigations**

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#### **D18.04 Hydrologic Properties of Soil and Rock**

R. S. Ladd

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

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#### **D18.19 Geotextiles and Their Applications**

B. R. Christopher

#### **D18.20 Impermeable Barriers**

A. I. Johnson

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#### **D18.92 Papers**

E. T. Selig

#### **D18.93 Nomenclature for Soil and Rock Mechanics**

A. I. Johnson

#### **D18.94 Education and Training**

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#### **D18.96 Research Steering and Standards Development**

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#### **D18.97 Special Awards**

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#### **D18.98 Hogentogler Award**

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#### **D18.99 Quality Control**

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