

TESTING FORUM

Call for Papers

Symposium on Durability and Specification Conformance Testing of Rock Used for Erosion Control

Original papers are needed for the Symposium on Durability and Specification Conformance Testing of Rock Used for Erosion Control, sponsored by ASTM Committee D-18 on Soil and Rock. The symposium will be held June 18, 1992, in Louisville, Kentucky in conjunction with the June 14–16, 1992 standards development meeting of Committee D-18.

The symposium will provide an opportunity to examine the current technology used by scientists, geologists, and engineers to measure, evaluate, and improve through special treatments the durability and performance of rock used for riprap, gabions, canal and channel linings, and other erosion control structures. In addition, the symposium will serve as a forum for presenting state-of-the-art procedures used by construction personnel for specification conformance and compliance testing.

Due to the wide variety of rock types and sources available, the multitude of uses, and exposure to differing climatic conditions, no consensus exists among those who must design a testing program to evaluate the durability of the rock for the proposed life of the associated structure. Present durability tests are generally patterned after those used for aggregates. The tests are frequently made on very small-scale specimens that may or may not be representative of the larger rock mass. Small specimens are used since the equipment needed to test large specimens is expensive and not readily available.

Methods of treatment to improve performance and durability may include the use of aerosols, slush-grouting, and injection grouting. At the present time, there are no accepted methods for evaluating the effectiveness of these or other treatment methods.

Construction personnel use a variety of procedures for the verification of quality control and quality assurance. These procedures may include direct measurement of the maximum/minimum size or weight or simply a visual examination/estimate. Improvement in QC/QA verification is a major concern.

The symposium will be organized into two sessions: (I) durability testing, evaluation, and improvement control, and (II) quality control and assurance. Papers are solicited for Session I to include such subjects as physical and chemical properties related to durability, accelerated weathering tests, specimen preparation, correlation of specimen size to test results, special field studies, and evaluation methods and treatment methods for improving performance. Topics for Session II may include physical measurements, visual comparisons, or any other appropriate methods.

Prospective authors are asked to submit a title, a 300–500 word abstract (in English), and the ASTM Paper Submittal Form by July 12, 1991 to Dorothy Savini, Symposia Operations, ASTM, 1916 Race Street, Philadelphia, PA 19103, (215) 299-5413.

Authors will be notified of their acceptance for presentation by October 15, 1991 by Symposium Chairman Charles McElroy. ASTM may print and distribute abstracts with the approval of the symposium chairman.

A Special Technical Publication (STP) based on the symposium proceedings is anticipated by ASTM. Papers presented at the symposium will be included in the STP if they are approved through the ASTM peer review process. Main authors will receive a complimentary copy of the volume(s) containing their papers. The main author is the author corresponding with the ASTM publications staff. All published authors may purchase reprints of the papers at cost.

Final manuscripts for the STP based on this symposium are due by April 17, 1992. This deadline will be rigidly enforced. All papers received after this deadline may be forwarded to the appropriate ASTM journal to be considered for publication.

More information is available from the Symposium Chairmen: Charles H. McElroy, Soil Conservation Service, P.O. Box 6567, Fort Worth, TX 76115, Telephone: (817) 334-5444; or David A. Lienhart, U.S. Army Corps of Engineers, Ohio River Division, P.O. Box 1159, Cincinnati, OH 45201-1159, Telephone: (513) 684-2155.

Fracture Toughness and Fatigue Crack Growth Testing Focus of ASTM Training Course

Fracture Toughness and Fatigue Crack Growth Testing, a three-day Standards Technology Training course presented by ASTM, will be held July 8–10, 1991 at the University of Utah in Salt Lake City.

This course will provide an intensive introduction to fracture toughness and fatigue crack growth testing using ASTM Test Methods E 399, Plane-Strain Fracture Toughness of Metallic Materials, and E 647, Constant-Load-Amplitude Fatigue Crack Growth Rates. Attendees will learn the correct procedures for running these tests and how to evaluate the results. They will gain hands-on experience in proper experimental techniques, data evaluation, and reporting results by actually performing the tests in small groups. This course is designed for test technicians, engineers, data analysts, and test machine software writers.

A \$595 fee includes a workbook of lecture notes, the two ASTM standards referenced in the course, coffee and soda breaks, and transportation between the course location and the hotel. The registration deadline is June 17 and class size is limited.

A block of rooms has been reserved (but not covered by the course fee) at the Residence Inn Marriott. For a free brochure, including program, registration, and hotel information, contact Kathy Dickinson, ASTM Standards Technology Training, 1916 Race Street, Philadelphia, PA 19103, 215/299-5480 (Fax: 215/299-5470 or 215/977-9679).

Free ASTM Publications Catalog Available

The 1991 ASTM Publications Catalog describes 68 Volumes of the *Annual Book of ASTM Standards* and several hundred related technical publications. ASTM standards and related publications are used worldwide to specify materials, assure quality, integrate production processes, promote trade, and enhance safety.

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The catalog is available free from ASTM Customer Service, 1916 Race Street, Philadelphia, Pennsylvania 19103, 215/299-5585.

ASTM to Offer Training Course on Fire Tests in Building Codes

The fundamental principles, techniques, and equipment used in the fire tests most commonly referenced in national and local building codes will be the focus of *Fire Tests in Building Codes: Principles and Applications*, a two-and-a-half-day Standards Technology Training course sponsored by ASTM.

The courses will be held October 14–16, 1991 in Norwood, Massachusetts. It is designed for fire marshals, building code officials, architects, fire protection engineers, industry managers and engineers, and building products manufacturers.

Fire Tests in Building Codes is designed to provide an understanding of the major areas of fire testing (fire growth limitation, fire containment, and the messengers of fire); the relationship between national codes and standards bodies, government, and industry; and current developments and future trends in fire testing and regulation. The focus is on practical applications such as how fire resistance ratings are determined, how building materials and design influence fire resistive qualities, how advanced computer modeling techniques will help prevent future fire damage, and how to specify testing performed by outside laboratories.

The \$495.00 fee to attend the course covers lecture notes; coffee and soda breaks; transportation to and from the demonstration sites; and a copy of *ASTM Compilation of Fire Test Standards, 3rd Edition*. There is a discounted fee of \$445.00 for Class A code officials and other government employees. The registration deadline is September 23. Please note that class size is limited. For a free brochure including a program, registration, and hotel information, contact Kathy Dickinson, ASTM, 1916 Race Street, Philadelphia, PA 19103, 215/299-5480 (Fax: 215/299-5470 or 215/977-9679).

Acoustics and Noise Control Standards Focus of ASTM Training Course

The basic principles and practical applications of architectural acoustics are the focus of *Acoustics and Noise Control Standards for Architectural and Industrial Applications*, a two-day Standards Technology Training course sponsored by ASTM.

The course will be held November 4–5, 1991 in St. Petersburg, Florida. It is designed for architects, designers, engineers, and building contractors; product, environmental, and test engineers; plant hygienists; building code and state regulatory officials. The program includes laboratory demonstrations and a review of 18 related ASTM standards. The demonstration will be at the Jim Walter Research Corporation.

A \$545.00 fee includes a workbook of lecture notes, copies of visual aids, all ASTM standards referenced in the course, coffee and soda breaks, and transportation to and from the laboratory demonstrations. The registration deadline is October 14, 1991. Class size is limited so register early. For a free course brochure, including program, registration, and hotel information, contact Kathy Dickinson, ASTM, 1916 Race Street, Philadelphia, PA 19103, 215/299-5480 (Fax: 215/299-5470 or 215/977-9679).

Publication Notice: *Earth Manual, Part 2*

The Bureau of Reclamation is proud to announce publication of the third edition of *Earth Manual, Part 2*. This new edition is published in two separate parts, unlike previous editions. The *Earth Manual* provides information on soil properties; field and laboratory investigations; and quality construction control of soils used as foundation materials for dams, canals, and other water resources structures. The second edition of *Earth Manual, Part 1*, published in 1974, contains technical information on general earth and foundation technology for constructing water resources structures. Part 2 includes standard laboratory and field procedures for investigating and testing soil materials for engineering design, construction, operation, and maintenance of water resources structures. Also included are equipment calibration procedures. Both volumes of the *Earth Manual* are available for purchase: Part 1 costs \$15 and Part 2 costs \$30. Requests for copies should be forwarded to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20204, or the Bureau of Reclamation, Denver Office, Attn.: D-7923A, P.O. Box 25007, Denver, Colorado 80225.

CORRECTION

The following correction should be noted for the paper by Fatani, Bauer, and Al-Joulani published in the March 1991 issue of *Geotechnical Testing Journal*. Equation 3 on page 79 should read:

$$\epsilon = \tan^{-1} \left(\frac{1}{r + (\tan \alpha)^{-1}} \right)$$

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ASTM Committee D18 Awards Presented at San Diego Meeting



ASTM Award of Merit

Richard E. Gray (on left) received the ASTM Award of Merit, the highest award of the Society. The award was presented by Jay Millaine (on right), Chairman of the ASTM Board of Directors. Mr. Gray, Senior Vice President of GAI, Inc. in Monroeville, Pennsylvania, received this award for exceptional service as chairman of technical and executive subcommittees in Committee D-18 on Soil and Rock and for outstanding leadership in the long-range planning of the Committee's activities and procedures of operation. He joined Committee D-18 in 1964. He contributed substantially to the improved revision of D 420, Standard Guide for Investigating and Sampling Soil and Rock. He was a major contributor, by his administration and planning, to a period of rapid growth and reorganization of Committee D-18. He was particularly cited for his leadership and dedicated work in the following groups: Executive Subcommittee as member and vice-chairman; Task Group to Review Committee D-18 Activities; Task Group, Long Range Planning, Chairman; and Subcommittee D18.80, Planning, Chairman. In addition, as chairman of another group, Gray was the primary author of the *D-18 Procedures Guide*—an accomplishment of great significance to Committee D-18.



1990 C.A. Hogentogler Award

The 1990 C.A. Hogentogler award was received by John T. Germaine and Charles C. Ladd, Civil Engineering Department, M.I.T., for their state-of-the-art paper "*Triaxial Testing of Cohesive Soils*," which appeared in *Advanced Triaxial Testing of Soil and Rock, ASTM STP 977*. Although the award was announced in the June 1990 meeting, it was presented in the January 1991 meeting. In the above photo, Richard Ladd (on right, Chairman of Committee D18 and brother to one of the award recipients) presents the award to John Germaine.



Outstanding Achievement Award

A D18 Outstanding Achievement Award was presented to Vincent Drnevich (on left), by Richard Ladd, Chairman of Committee D18, for Vince's outstanding work as Technical Editor of the *Geotechnical Testing Journal* from 1985 to 1989. He was cited for his special efforts to expand the stature and visibility of the *Journal*, especially among the international community. Vince is leaving his post of Professor of Civil Engineering at the University of Kentucky to become Professor and Head of Civil Engineering at Purdue University.

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Special Service Awards

Three Special Service Awards were presented at the winter meeting by Chairman Richard Ladd. The names of the recipients, the bases for the awards, and photographs of two of the presentations are shown below.

C. Bernt Pettersson of Brown and Root, Inc. of Houston (photograph not available) was cited for outstanding work as chairman of Subcommittee D18.01 on Surface and Subsurface Characterization over 6 years, for initiating symposia, building

up membership, and initiating the organization of Subcommittee D18.21 on Groundwater and Vadose Zone Investigations.

D18 Standard Development Awards

Committee D18 recognizes the time and effort expended by individuals in developing standards and working on major revisions of existing standards with the D18 Standard Development Award. Two awards were presented at the Winter meeting. The names of the recipients, the associated standards, and photographs of presentations made by Richard Ladd are given below.



To Jan Wildman of Ardaman and Associates, Orlando, Florida for outstanding service in standards development, for being vice chairman of Subcommittee D18.05, for being secretary of Subcommittee D18.03, and especially for her work establishing the standard for the *Consolidated-Undrained Triaxial Compression Test on Cohesive Soil* (D 4767-88).



To Amster K. Howard (on left), of the Bureau of Reclamation, Denver, for developing the new Standard, *Standard Test Method for Shrinkage Factors of Soils by the Wax Method* (D 4943).



To David Nielson (left) of IEP Inc., Worthington, Ohio, and A. Ivan Johnson (center) of A.I. Johnson, Inc. of Arvada, Colorado for planning and organizing the January 1988 Symposium on Ground Water and Vadose Zone Investigations and the resulting *Ground Water and Vadose Zone Monitoring*, ASTM STP 1053.



To Keith R. Rademacher (on left), of Grand Junction, Colorado, for developing the new Standard, *Standard Test Method for Determination of Water (Moisture) Content of Soil by Direct Heating Method* (D 4959).

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Note to Authors

A new author-date reference style has been instituted for the *Geotechnical Testing Journal* beginning in 1991. Authors who prepare papers for GTJ should be cognizant of the new style. Authors' names and publication dates are cited in the text. An alphabetical list of all cited references is placed at the end of the article.

The writer of the article must check that all references have at least one text citation and that all text citations are traceable to a complete reference. Lengthy strings of numerous works within one text citation cannot be accommodated in this reference system since they disrupt the continuity of the text.

TEXT CITATION STYLE

1. The basic form in the author-date system consists of the last name of an author and the publication year as follows:

(Jenkins 1980)

Two authors are handled as follows:

(Jenkins and Smith 1982)

Use et al. for three or more authors:

(Jenkins et al. 1969)

2. "Author" in this reference system is defined as the name under which the work is alphabetized in the list of works cited at the end of the article. Thus "author" may refer to an editor, compiler, or an organization as well as an individual author or group of authors. Anonymous is not an acceptable designator for the author of a referenced work. If authorship cannot be determined, an article is listed under its title, and a short title is used in the citation.
3. The citation is usually set off in parentheses just before a mark of punctuation, but it can be handled as part of the sentence. Both styles are illustrated below:
The test was carried out successfully (Carter 1980).
Carter (1980) carried out a successful test.
4. Two works by the same author in the same year are set up with letters as designators as follows:
(Kelly 1986a, 1986b)
The publication dates in the full reference list must then be keyed to 1986a and 1986b by the writer of the article.
5. Several works by one author in different years are handled as follows:
(Kelly 1982, 1985, 1988)
6. Several works by different authors are handled as follows:
(Light 1980; Wong 1982; Smith 1985)
7. When an article or book has no individual author, editor, or compiler named and is sponsored by a corporation, government agency, association, or other named group, use the name of the sponsor as the author's name in both the text reference and the alphabetical reference list. If the whole name is long and cumbersome, abbreviate it to a manageable size within the text citation but make sure that the ab-

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breviated form is easily traceable to the full reference. For example:
Composites Research Institute and Materials Structural Analysis Society, 1989, *Composites for Small Aircraft Applications*, University of Pennsylvania Press, Philadelphia, PA, pp. 25–30.
Citation would be (Composites Research Institute 1989).

ALPHABETICAL REFERENCE LIST STYLE

All cited author references are listed alphabetically by the last name of the first author at the end of each paper. Please see definitions of “author” in the text citation above. Each reference must be complete containing sufficient information for the reader to locate the cited source. For the reader’s convenience, the year of publication is placed immediately after the author’s name. If there is more than one article by the same author, list the references for that author chronologically from earliest to most recent work. References for books and periodicals are illustrated below.

Books:

Last names and initials of all authors, year of publication, “title of the paper,” *title of the book*, publisher’s full name, publisher’s location, inclusive page numbers.

Periodicals:

Last names and initials of all authors, year of publication, “title of the paper,” *full title of the periodical* (do not abbreviate), volume, number, inclusive page numbers.

Note to Authors

Many authors who prepare papers or technical notes for the ASTM *Geotechnical Testing Journal* are not cognizant of the distinction between the words *sample* and *specimen*. When preparing material for the *Journal*, authors should be especially sensitive to correct usage of these words. To promote uniformity and to make the editorial process more efficient, the following definitions are presented.

DEFINITIONS

Sample—A representative portion of a whole; a small segment or quantity taken as evidence of the character of an entire group or lot. For geotechnical work, a *sample* is the material taken in the field as representative of a given soil or rock strata, deposit, or area. *Samples* are often shipped to a laboratory for study.

Specimen—A particular single item, part, aspect, or incident that is typical and indicative of the nature, character, or quality of others in the same class or group (sample). A unit, as of a mineral, a soil, or a rock core, that is deliberately selected for examination or study and is usually chosen as typical of its kind. A portion of material for use in testing. Again, for geotechnical work, a *specimen* is a representative part or portion of the larger *sample*, and individual *specimens* are prepared for laboratory testing.

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ISR Research Underway to Improve ASTM Rock Property Tests

The first round of testing is underway in an ASTM Institute for Standards Research (ISR) project to establish measures of precision for some of the most important rock-property standard test methods. Ultimately, this work will strengthen these tests, which have a variety of applications such as the design, construction, and monitoring of tunnels and shafts, dam foundations, repositories in rock for nuclear waste, underground chambers for energy storage, and geotechnical energy recovery. Round One involves the validation of the following ASTM rock properties test methods: (1) D 2938 Unconfined Compressive Strength of Intact Rock Core Specimens, (2) D 3967 Splitting Tensile

Strength of Rock Core Specimens, (3) D 3148 Elastic Moduli of Intact Rock Core Specimens in Uniaxial Compression, (4) D 2845 Laboratory Determination of Pulse Velocities and Ultrasonic Elastic Constants of Rock. Funding for the first round was secured from the Defense Nuclear Agency, the National Science Foundation, Sandia National Laboratories, and the U.S. Bureau of Mines. Round Two involves the validation of two standards: D 2664 Test Method for Triaxial Compressive Strength of Undrained Rock Core Specimens without Pore Pressure Measurement, and the Proposed Test Method for Elastic Moduli of Undrained Intact Rock Core Specimens in Triaxial Compression without Pore Pressure Measurement. Funding for Round Two is being sought from these organizations and others. A subsidiary of the American Society for Testing and Materials, ISR needs \$80,000 to fund the second round. Sponsors serve on an advisory committee to oversee the project. Dr. Howard J. Pincus, professor emeritus of geology and civil engineering, University of Wisconsin-Milwaukee, is the project manager. ISR will manage the research contract and work with ASTM to incorporate the research results into ASTM standards. For more information, contact Kathleen Riley, Institute for Standards Research, 1916 Race Street, Philadelphia, PA 19103 (215-299-5527).

NEW BOOKS OF INTEREST FROM ASTM

TITLE: ASTM Standards on Geosynthetics, 2nd Edition

DESCRIPTION: Twenty-two ASTM specifications, test methods, practices, a guide, and a terminology document cover mechanical, endurance, permeability, and filtration properties of geosynthetics.

Over 50% of the standards in this second edition are new or revised. Examples of new standards include:

- D 4884 Test Method for Seam Strength of Sewn Geotextiles
- D 5101 Test Method for Measuring the Soil-Geotextile System Clogging Potential by the Gradient Ratio

AUDIENCE: For civil, geotechnical, environmental, and structural engineers to refer to when evaluating or designing the use of geosynthetics. Manufacturers and suppliers of geosynthetic materials, as well as testing facilities, will find this book to be a concise source of approved geosynthetic test standards.

122 pages (1991), Soft Cover

List Price: \$35.00

Member Price: \$31.00

ISBN 0-8031-1239-4

PCN: 03-435091-38

Available: March 1991

TITLE: STP 1081/GEOSYNTHETIC TESTING FOR WASTE CONTAINMENT APPLICATIONS

EDITOR: Robert M. Koerner

DESCRIPTION: STP 1081 assesses the state-of-the-art in geosynthetic testing for waste containment. These environmental applications are the fastest growing segment of the geosynthetics industry.

Twenty-six papers will help the user with the selection, testing, design, and use of geosynthetics. The peer-reviewed volume:

- Focuses on the many available geosynthetic material tests that are performed in isolation ("*index*" tests)
- Contrasts these tests with soil/geosynthetic material tests ("*performance*" tests)
- Determines if, and what type of, full scale field tests are available
- Identifies needs for modification of these tests, or for additional tests that better predict field performance than those that are currently available

Chapters include: Chemical Resistance of Geomembranes; Test Methods and Procedures to Evaluate Geomembranes; Chemical Resistance of Geotextiles and other Geosynthetics; Test Methods and Procedures to Evaluate Geotextiles and Other Geosynthetics; and Performance Behavior of Several Geosynthetic Systems.

AUDIENCE: For waste facility owners (both private and public); permitting agencies; consulting engineers and testing firms in waste industry. Also geotechnical engineers; environmental engineers; hydraulics engineers.

400 Pages (1990), Hard Cover

List Price: \$44.00

Member Price: \$35.20

ISBN 0-8031-1456-7

PCN: 04-010810-38