### TESTING FORUM

### **ASTM NEWS**

### **Award of Merit**

Edwin G. Hedstrom, assistant vice president of sales and technical services for Ideal Basic Industries, Inc., Denver, CO, has been named a 1983 recipient of the Award of Merit by ASTM.

Hedstrom, a resident of Evergreen, CO, received the award at a meeting hosted by ASTM Committee C-12 on Mortars for Unit Masonry held 22 June 1983 in Kansas City, MO. He was cited for 16 years of outstanding technical and educational service, research, and continued participation in ASTM through Committees C-1 on Cement, C-9 on Concrete and Concrete Aggregates, C-12 on Mortars for Unit Masonry, and C-15 on Manufactured Masonry Units. The Award of Merit, and the accompanying honorary title of Fellow of the Society, were established in 1949 by ASTM. The award recognizes distinguished service to the cause of voluntary standardization through productive service to ASTM, marked leadership, outstanding contribution, or publication of papers.

Hedstrom's primary involvement with ASTM has been through C-12, as secretary from 1969 to 1973 and currently as chairman of the Long Range Planning Subcommittee and a member of the C-12/C-15 Joint Masonry Committee. His research work as chairman of the now deactivated Masonry Cement Research and Educational Group directly influenced the direction of C-12 as the cement industry's involvement in the masonry industry increased through this group's efforts. Hedstrom has also directed ASTM activities through his work as chairman of the Educational Activities Committee of the American Concrete Institute. Additionally, Hedstrom is an active participant in seminars and is a member of the American Society of Civil Engineers.

Hedstrom received a BS degree in architectural engineering in 1956 from Kansas State University. He worked as a structural engineer, sales engineer, and, from 1964 to 1965 at Valley Block Company, as a general manager before coming to Ideal where he has held the positions of technical service engineer and special products administrator. Throughout his career, Hedstrom has been involved with the cement and concrete industries through the development and use of special cements, the manufacturing and curing of concrete block, and the use of fly ash and other mineral admixtures in concrete.

### **CCRL Management Moves**

Established in April 1929 as a Research Associate Program at the National Bureau of Standards, the Cement Reference Laboratory was created to have a recognized authority for inspection and instruction of cement testing laboratories. The importance of calibration of apparatus and compliance with specified conditions and methods was its particular goal. Now called the Cement and Concrete Reference Laboratory (CCRL), the office acts in an essentially advisory capacity. CCRL is sponsored by the National Bureau of Standards (NBS) and ASTM through Committees C-1 on Cement and C-9 on Concrete and Concrete Aggregates.

Testing laboratory inspection continues to be the most important activity of CCRL, the use of which is on a voluntary basis, with visits scheduled after a request from a responsible official of an eligible

laboratory. The laboratory must be equipped to make standard ASTM tests for cement, concrete, concrete aggregates, or steel reinforcing bars. The inspection program is designed to provide for a biyearly reinspection. Included are examination of the apparatus and procedures used in measuring properties of plastic and hardened concrete and of the apparatus customarily used in determining the conformance of concrete aggregates with the requirements of applicable ASTM specifications. As an optional feature, examinations of apparatus and procedures used in the testing of steel reinforcing bars are made in suitably equipped laboratories.

Inspection results are given in a comprehensive oral report to the laboratory supervisor and then sent later in a confirmatory written report.

John R. Dise, chief of the Materials Reference Laboratories Section at NBS, managed CCRL for 22 years. His many years at NBS includes cement and concrete testing laboratory inspection and planning and supervision of inspections. He also supervised soil and bituminous testing operations inspections in highway laboratories. Dise is a recipient of the ASTM Award of Merit. He is chairman of ASTM Subcommittee C01.95 on Methods of Test and a member of Committees C-1, C-9, E-28 on Mechanical Testing, and E-36 on Criteria for the Evaluation of Testing and Inspection Agencies.

The new manager of CCRL, James H. Pielert, who was appointed last December, has worked in various positions in the Center for Building Technology at the NBS. Pielert is presently the group leader of the Materials Reference Laboratories. He is a member of ASTM Committees E-6 on Performance of Building Constructions and E-36 on Criteria for the Evaluation of Testing and Inspection Agencies.

### Symposium on Blended Cements

The following is a list of papers that will be presented at the Symposium on Blended Cements sponsored by ASTM Committee C-1 on Cement to be held in Denver, CO, on Wednesday evening, 27 June 1984.

- Performance of Blended Cements Made with Controlled Particle Size Distribution (CPSD) Cements—R. A. Helmuth, D. A. Whiting, F. J. Tang, and H. Love, Portland Cement Association, Skokie, IL
- Manufacture and Characteristics of Portland Blast-Furnace Slag Cements—Giuseppe Frigione, CEMENTER, Naples, Italy
- Effects of Ground Blast-Furnace Slags on Properties of Mortars and Concretes—S. Gebler, V. S. Dubovoy, and P. Klieger, Portland Cement Association, Skokie, IL
- The Selection of Extender Materials for Blended Cement Production—G. K. Moir, Blue Circle Industries, Greenhithe, Kent, England
- Permeability and Pore Structure of Cement Pastes Containing Fly Ash, Slag and Silica Fume—R. D. Hooton, Ontario Hydro, Toronto. Canada
- Evaluation of the Performance of Blast-Furnace Slag and Fly Ash When Blended or Mixed with Portland Cement—R. H. Mills, University of Toronto, Toronto, Canada

The presentations will begin at 8 p.m. and will end at approximately 10:40 p.m.

### Cement, Concrete, and Aggregates Table of Contents Volume 5, 1983

### No. 1, Summer

Mechanical Properties, Durability, and Drying Shrinkage of Portland Concrete Incorporating Silica Fume—	3
GEORGES G. CARETTE AND V. MOHAN MALHOTRA	
The Incorporation of Low Levels of By-Products in Portland Cement and the Effects on Cement Quality—Kenneth	14
E. DAUGHERTY AND JOHN E. FUNNELL	
The Potential Use of Catalysts in the Cement Industry—ali i. safa, kenneth e. daugherty, william a. mallow,	21
JERRY J. DZIUK, AND JOHN E. FUNNELL	
Waste Fuels Program at the Mississauga Plant of St. Lawrence Cement, Inc.—LAWRENCE P. MACDONALD	26
The Use of Unconventional Fuels in Cement Manufacture—BARRY M. CAPON, PETER B. LAYNE, AND DAVID WATSON	30
The Grace Factor: A New Tool for Cement Industry Process Control Engineers—P. W. WELCH	35
Performance of Blast-Furnace Slag Cement—Alberto Cattaneo and Giuseppe frigione	42
Study of Alkali-Silica Reactivity Tests to Improve Correlation and Predictability for Aggregates-WILLIAM J. HECK	47
Microcracking and Definition of Failure of High- and Normal-Strength Concretes—RAMON L. CARRASQUILLO AND FLOYD O. SLATE	54
Quantitative X-Ray Diffraction Analysis of Cement and Clinker: A Bibliography—LESLIE J. STRUBLE	62
Lithological Characteristic of Concrete Aggregrates as Related to Durability—RICHARD F. ROBINSON	70
Some Opportunities of Offset Poor Quality Characteristics of High-Alkali Cement—Louis U. Spellman	73
Testing Forum	77
No. 2, Winter	
Chloride Penetration and the Deterioration of Concrete Bridge Decks—PHILIP D. CADY AND RICHARD E. WEYERS	81
Evaluation of Selected Procedures for the Rapid Analysis of Fresh Concrete—william J. HEAD,	88
HERBERT M. PHILLIPPI, PAUL A. HOWDYSHELL, AND DEBORAH LAWRENCE	
Some Questions Concerning ASTM Standards and Methods of Testing Fly Ash for Use with Portland Cement—	
RICHARD HELMUTH	103
Variation of Laboratory Concrete Flexural Strength Tests—w. CHARLES GREER, JR.	111
Chemical Analysis of Portland Cement by Energy Dispersive X-Ray Fluorescence—BRADNER D. WHEELER	123
A Method for Analyzing Void Distribution in Air-Entrained Concrete—ROBERT E. PHILLEO	128
Alkali Reactivity of Strained Quartz as a Constituent of Concrete Aggregate-ALAN D. BUCK	131
Production Technology of Expanded Clay Aggregate Gravel with Bulk Density Below 300 kg/m <sup>3</sup> OLEG JU. YAKSHAROV AND BORIS V. SKIBA	134
Effects of Initial Field Curing on Standard 28-Day Cylinder Strengths—RICHARD C. MEININGER	137
Efficient Large Panel Roofing—rostislav n. matselinsky, yurii a. rogatin, and leonid s. spannut	142
Discussion of "Proportioning of Coarse Aggregate for Conventionally and Gap-Graded Concrete" by	145
D. O. Enrenburg—shu-tien li and v. ramakrishnan	
Book Review/Testing Forum	147

### **ASTM Committee C-1 on Cement**

### Scope

Government and ASTM.

## The development of specifications, methods of test, recommended practices, and definitions of terms for hydraulic-cements, including portland, natural, pozzolanic, masonry and slag cements, and modifications of the foregoing, and combinations during manufacture thereof; the investigation of the properties of hydraulic cements and the promotion of improvement and uniformity of testing and these materials; joint sponsorship, with ASTM Committee C-9 on Concrete and Concrete Aggregates, of the Cement and Concrete Reference Laboratory, a cooperative project of the

### **Officers**

Chairman: W. L. Dolch, Purdue University, School of Civil Engineering, Lafayette, IN 47907

Vice-Chairman: C. D. Fehnel, Lone Star Industries, Inc., P.O. Box 2880 (411 Putnam Ave.), Greenwich, CT 06830

Secretary: R. A. Hines, Missouri Portland Cement Co., 7711 Carondelet Ave., St. Louis, MO 63105

Membership Secretary: J. W. Meusel, Atlantic Cement Co., Inc., P.O. Box 30, Stamford, CT 06904

### ASTM Committee C-9 on Concrete and Concrete Aggregates

### Scope

# The assembling and study of data pertaining to the properties of portland cement concrete and its constituent materials, including the study of effect of characteristics of materials and mixtures upon the properties of concrete; the development of methods of test for concrete and for the constituent materials of concrete (except cement), as well as for certain related materials, such as materials used in curing; the formulation of standard specifications for the constituent materials of concrete (except cement) and for concrete itself (subject to suitable interpretation of the term "concrete"). The scope of Committee C-9 does not include the field of design and construction of concrete structures except insofar as references need to be made to construction methods in special cases of concrete as "over-the-counter" materials.

### Officers

Chairman: J. F. McLaughlin, Purdue University, Office of the Dean of Engineering, ENAD Bldg., W. Lafayette, IN 47907

Vice-Chairman: R. J. Schutz, Protex Industries, 1331 West Evans Ave., Denver, CO 80223.

Secretary: G. S. Bobrowski, Master Builders, 23700 Chagrin Blvd., Cleveland, OH 44122

Membership Secretary: D. T. Smith, Marquette Cement Manufacturing Co., 2200 First American Center, Nashville, TN 37238