

TESTING FORUM

ASTM NEWS

Call for Papers

Prospective authors for the June 1984 Symposium on Blended Cements, to be held in Denver, CO, must submit a 200-word abstract by 30 June 1983 according to the Symposium Chairman Geoffrey Frohnsdorff. The symposium is sponsored by Committee C-1 on Cement of ASTM.

There has been an increased interest in blended cements worldwide because of their greater range of possible compositions than portland cements according to Symposium Chairman Geoffrey Frohnsdorff of the National Bureau of Standards, Washington, DC. Committee C-1 and its Subcommittee C01.12 on Blended Cement have developed a draft standard to determine the composition of blended cement in ambiguous terms relating to performance. The symposium will deal with issues relevant to the proposed standard.

Contributions to the symposium should address, but are not limited to the following subjects:

- methods for evaluating the performance of blended cements,
- prediction of performance of blended cements,
- characterization of the ingredients of blended cements,
- analysis of blended cements,
- mechanisms of reactions of blended cements and their ingredients, and
- world standards for blended cements.

A special technical publication on the symposium proceedings is anticipated by ASTM.

Prospective contributors are requested to submit a 200-word abstract and an ASTM Paper Submittal Form by 30 June 1983 to Geoffrey Frohnsdorff, Symposium Chairman, National Bureau of Standards, Center for Building Technology, Building 226, Room B 348, Washington, DC 20234 (301/921-7304). ASTM Paper Submittal Forms are available from Geoffrey Frohnsdorff or from Kathy Greene, ASTM Publications Division, 1916 Race Street, Philadelphia, PA 19103 (215/299-5414).

Following acceptance of the proposed abstract, authors will be required to submit their manuscripts to ASTM by 31 March 1984. All manuscripts are subjected to peer review. All papers submitted and subsequently published will be eligible for consideration for Committee C-1's P. H. Bates Award.

For more information on the symposium, contact Geoffrey Frohnsdorff or Kenneth Pearson, ASTM Standards Development Division, 1916 Race Street, Philadelphia, PA 19103 (215/299-5520).

Award

Dr. David A. Whiting, research, engineer for the Portland Cement Company, Skokie, IL, was named a recipient of the Sanford E. Thompson Award by ASTM. Dr. Whiting, a resident of Harvard Terrace, Skokie, received the award at the 9 Dec. 1981 meeting of ASTM Committee C-9 on Concrete and Concrete Aggregates

in Houston, TX. Dr. Whiting was cited for his paper, "Effect of Mixing Temperature on Slump Loss and Setting Time of Concrete Containing High-Range Water Reducers," which appeared in the journal, *Cement, Concrete, and Aggregates*, Vol. 2, No. 1, Summer 1980.

The Sanford E. Thompson Award was established in 1938 by ASTM. The award is given to the author or authors of a paper published by the society that is of outstanding merit in the field of concrete and concrete aggregates.

Dr. Whiting began his career as an associate research chemist in 1970. In 1974, he assumed the same position for the Portland Cement Association and became a research engineer in 1979, the position he presently holds. He has concentrated on various aspects of concrete materials technology throughout his career, including admixtures, physical and thermal properties of concretes, durability and corrosion reinforcement in concrete, and development of test methods. In addition to ASTM, Dr. Whiting also holds membership in the National Association of Corrosion Engineers.

A native of New York, NY, Dr. Whiting received his B.S. degree in chemistry from the City College of New York in 1970 and his Ph.D. degree in materials science from the Pennsylvania State University in 1974.

Portland Cement Association

Moore Named Association Secretary

Max D. Moore, director of communications for the Portland Cement Association, has been elected to the additional position of corporate secretary. He succeeds George H. Paris, who will retire 31 May 1983.

A graduate of Indiana State University, Moore has been with the Association for 22 years in editorial public relations, and communications positions.

The Portland Cement Association is the research, market development, and public affairs arm of the cement industry of the United States and Canada. It has headquarters in Skokie, IL and offices in major cities of both countries.

The Pennsylvania State University

New Method

A new method of soaking concrete bridge decks with liquid plastic might save taxpayers as much as two thirds of what is currently spent on maintenance and repairs, researchers believe.

"Engineers have known for some time that impregnating concrete bridge decks with plastic could significantly extend the life of the decks," says Philip D. Cady, professor of civil engineering at The Pennsylvania State University. "The obstacle," he adds, "has been that the process, which includes solidifying the plastic in place at moderate temperatures, was commercially impractical.

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We now have developed an economic method of doing it that appears very feasible for highway departments to implement."

In a report prepared for the National Cooperative Highway Research Program of Washington, DC, which funded much of the research since 1973, Dr. Cady and Richard E. Weyers, instructor and civil engineering Ph.D. candidate, present the new method.

Work was sponsored by the American Association of State Highway and Transportation Officials in cooperation with the Federal Highway Administration. It was conducted in the National Cooperative Highway Research Program (NCHRP) administered by the Transportation Research Board of the National Research Council.

"Concrete bridge decks develop potholes primarily because of the rusting of the steel reinforcing bars embedded in the concrete for structural strength," Dr. Cady explains. "When the bars rust, which is largely caused by salty water reaching them through the concrete, they expand. This causes the concrete to crack and pop off at the surface. In short order the bridge decks are being cracked from within by the pressure of the rusting steel bars and from without by the wear and tear of traffic on the surface. As the concrete breaks up, potholes form and grow at an increasingly rapid rate."

Dr. Cady further observes that concrete is a very porous material, with some 15% of it being tiny void spaces. The salty water travels through this natural capillary system, eventually reaching and rusting the steel bars.

"By filling the capillary system with plastic, the salty water cannot reach the steel bars. In addition, any salt already in the concrete will be unable to move and react with the bars," he says.

The method developed by the Penn State engineers involves cutting grooves in the surface of the bridge deck that reduce by a factor of six the amount of time it takes the concrete to absorb the plastic.

After the grooves are cut, the concrete is dried before the plastic is applied. An infra-red heater has been found most effective in drying the concrete.

The liquid plastic is then poured into the grooves in the concrete. After it soaks in deeply enough to surround the steel bars, the concrete is heated again to solidify the plastic.

"The whole process," Dr. Cady says, "takes about 40 h per application area, including the time required to fill in the grooves with plasticized concrete." The work at Penn State has been on a laboratory scale.

"Before highway departments could use or experiment themselves with this process on a large scale, several pieces of heavy equipment would have to be built," Dr. Cady notes. These include

a grooving machine, at an estimated \$500 000, the most expensive item, and an infra-red heating machine, estimated at about \$10 000.

"Still," he says, "this method appears to represent a real bargain when one considers that maintenance and repair bills could be reduced by more than two thirds in the long run."

For further information contact Dr. Philip D. Cady, professor of civil engineering, 814/865-4682 and Richard E. Weyers, instructor in civil engineering, 814/865-5932.

The opinions and conclusions expressed or implied in this report are those of the research agency. They are not necessarily those of the Transportation Research Board, the National Academy of Sciences, or the U.S. Government.

American Concrete Institute

Call for Papers

Papers are invited for presentation at the symposium, Nondestructive Test Methods for Concrete Strength, to be held in Phoenix, AZ during ACI's Annual Convention, 4-9 March 1984. The symposium will be one session lasting 3 h and is jointly sponsored by Committee 228 on Nondestructive Testing of Concrete and Committee 214 on Evaluation of Results of Tests Used to Determine Strength of Concrete.

Topics may include the following:

- Case studies of the use of nondestructive test (NDT) methods for concrete strength determination
- Research studies of NDT methods
- Comparative studies of variability of different NDT test methods
- Interpretation of test results

Authors are invited to submit a one-page summary of their paper before 15 Aug. 1983. Authors will be notified of acceptance by 15 Oct. 1983, and completed papers will be due by 31 Jan. 1984. A number of papers will be selected for presentation at the symposium. The Committees seek papers dealing with previously unpublished data or information. All accepted papers will be published in a special symposium volume. One-page summaries should be sent to: Dr. H. S. Lew, Chairman, ACI Committee 228, National Bureau of Standards, Building 226, Room B162, Washington, DC 20234.



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ASTM Committee C-1 on Cement

Scope

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 Government and ASTM.

Officers

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

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

Membership Secretary: R. O. Lane, Tennessee Valley Authority, Singleton Materials Engineering Laboratory, Knoxville, TN 37902

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

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