

Recognizing 40 Years of Contributions to ASTM Committee C9 on Concrete and Concrete Aggregates

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Honoring R. Douglas Hooton
Part 4—Impacts on Standard Specifications and Test Methods

THE WORLD'S GATHERING PLACE FOR ADVANCING CONCRETE





Overview

- Compare ASTM with ACI
- Describe the ASTM Standards Development Process
- Summarize Doug's Contributions to ASTM Committee C09

ASTM International

- An independent not-for-profit organization formed by chemists and engineers in 1898 to develop voluntary consensus standards
- Formerly known as **American Society for Testing and Materials**
- One of the world's largest international standards development organizations



ASTM—Key Historical Events

- 1898 – Founded in Philadelphia
- 1901 – First standard on steel rails issued
- 1902 – Committee C01 on Cement established
- 1910 – First publication of *ASTM Book of Standards*
- 1914 – Committee C09 on Concrete and Concrete Aggregates established
- 2001 – Name changed to **ASTM International** to reflect global participation and worldwide use of its standards

ASTM and ACI Compared

ASTM	ACI
<ul style="list-style-type: none">• Primarily a standards development organization, with some training programs on the ASTM process and use of standards• About 30,000 members and 75 participating countries• More than 13,000 standards	<ul style="list-style-type: none">• A technical and educational organization developing knowledge to permit use of concrete to fullest potential• About 35,000 members from more than 100 countries• More than 500 documents<ul style="list-style-type: none">• Standards• Guides and reports

Standards Development Process

ACI

Standards Board



Public Review



TAC Review



Committee Ballot

Necessary step
for a “standard”

ASTM

Committee on Standards



Main Committee Ballot
Society Ballot

Serves as public
review



Subcommittee Ballot

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1936 ACI-ASTM Agreement

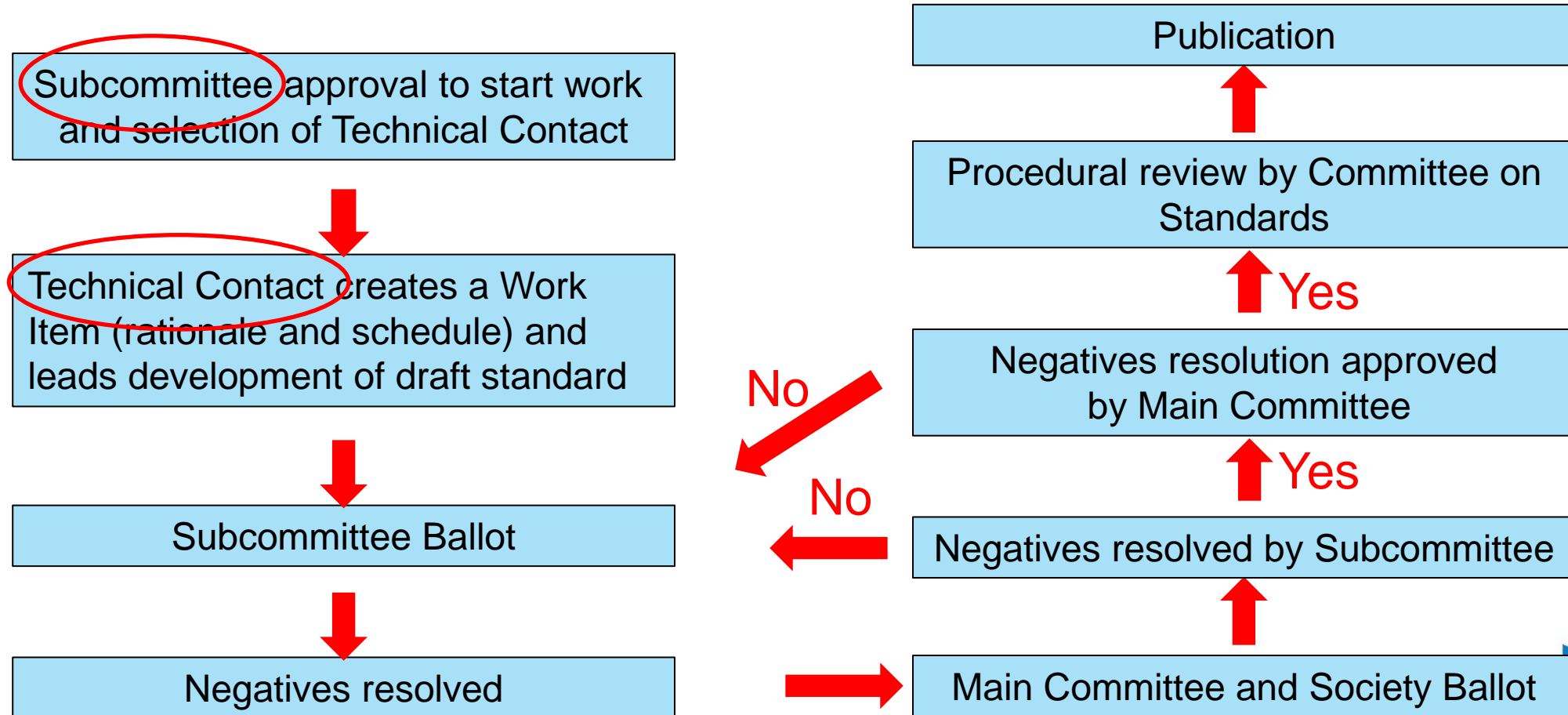
- ACI will refrain from writing specifications for “over-the-counter” engineering materials and will concentrate on:
 - Design standards
 - Construction specifications
- ASTM will refrain from writing standards related to design and construction practices and will concentrate on:
 - Test methods and practices
 - Product specifications

Exception

- If ACI requires test methods or product specifications and there is no ASTM Committee with the expertise or interest to develop such standards, ACI can develop these standards (TCM 4.1.2.2 and 4.1.2.3)
- The developed ACI standards will be transferred to ASTM if an ASTM Subcommittee is organized at later time to maintain the standards

Example are test methods and specifications developed by ACI 440 and later transferred to ASTM Subcommittee D30.10 on Composites for Civil Structures.

Developing an ASTM Standard



R. Douglas Hooton

- Joined Committee C09 in 1983
- Member of 12 technical and 6 administrative Subcommittees
- Served as Chair of 4 Subcommittees and Secretary of 1 Subcommittee
- Served on the C09 Executive Subcommittee
- Served as Secretary and Chair of Committee C09
- Chair of C01 on Cement and Chair of 8 Subcommittees

A Note of Appreciation to Bryant Mather: An Editorial by R. D. Hooton, Editor-in-Chief

In February 2000, I had the privilege of attending and participating in Bryant Mather's retirement as Director of the Structures Laboratory of the Waterway Experiment Station (WES) after 59 years of service. It was an enjoyable occasion and celebrated the contributions of an amazing man. Just to keep the record straight, Bryant will maintain his office at WES and will continue to represent the Army Corps of Engineers at ASTM.

ASTM records show that Bryant joined ASTM Committee C09 on January 1, 1946, and Committee C01 on Cement on October 1, 1954. It is interesting to note that Bryant is not the longest serving C09 member as this honor belongs to Charles Britzius, who joined in 1938. However, Bryant is the longest serving member who, with rare exception, still attends all meetings. Although Committee C09 has over 600 members, Bryant's presence is felt by everyone at our semi-annual meetings—and certainly those within earshot. Bryant has served in many capacities on both C01 and C09 including those of Chairman in the 1960s. He has served as President of ASTM (back before they changed it to the Chairman of the Board). He is both a C01, C09, and Society Honorary member. He was awarded the ASTM Award of Merit in 1959, the Sanford E. Thompson Award in 1961, and the Frank E. Richart Award in 1972. By my records, he is still active on 11 subcommittees on C09 and 4 on C01.

In the 1990s, Committee C09 established the Katharine and Bryant Mather Award, which is awarded every three years to a committee or subcommittee officer "who has performed the administrative and managerial duties of the position(s) in an exceptional manner so as to enhance the status of concrete technology as a discipline." This was the brain child of the late Jack Scanlon as a way of using the funds remaining after the Katharine and Bryant Mather International Conference on Concrete Durability held in 1987. It is not surprising that the award task group selected Bryant to be the first recipient.

While not all those who attend ASTM meetings agree with his views, he always says something worth listening to, he challenges others, stimulates those around him, and raises the intellectual level

as well as the level of humor at the meetings. His impact on improving the quality of standards is widespread.

Because of his prowess with the English language, and his encyclopedic knowledge of ASTM Regulations and the Form and Style Manual, Bryant continues to keep the chairmen of meetings in line on a regular basis and, even with recent vision problems, continues to find both editorial and technical errors in letter ballots.

Bryant's energy in support of ASTM seems boundless, and I thought I would share some of this with the readers of *Cement, Concrete, and Aggregates*. Again, congratulations, Bryant, on your retirement, and I trust it will not prevent your continued efforts in support of the activities of ASTM Committees C01 and C09.



Doug Hooton (left) and Bryant Mather (right), Feb. 15, 2000, at Bryant's retirement dinner, Vicksburg, Mississippi.

Editor-in-Chief of *Cement, Concrete, and Aggregates* 1993-2004

Letter from the Editor
June 2000



THE WORLD'S GATHERING PLACE FOR ADVANCING CONCRETE

Chair of C09 Subcommittees

- C09.66 Concrete's Resistance to Fluid Penetration (1996-2006)
- C09.48 Performance of Cementitious Materials and Admixture Combinations (2005-2013, 2017-present)
- C09.67 Resistance to the Environment (2010-2016)
- C09.51 Sulfate Resistance of Concrete (2024-present)

Standards Development

- Technical Contact for 30 Work Items in Committee C09
- New Standards as Sub Chair or Technical Contact
 - C1945 Specification for Raw or Calcined Natural Pozzolan for Use in Concrete
 - C1876 Test Method for Bulk Electrical Resistivity or Bulk Conductivity of Concrete
 - C1827 Test Method for Determination of the Air-Entraining Admixture Demand of a Cementitious Mixture
 - C1679 Practice for Measuring Hydration Kinetics of Hydraulic Cementitious Mixtures Using Isothermal Calorimetry

Standards Development

- New Standards as Sub Chair or Technical Contact
 - C1585 Test Method for Measurement of Rate of Absorption of Water by Hydraulic-Cement Concretes
 - C1556 Test Method for Determining the Apparent Chloride Diffusion Coefficient of Cementitious Mixtures by Bulk Diffusion
 - C1293 Test Method for Determination of Length Change of Concrete Due to Alkali-Silica Reaction
 - C1260 Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)

Practice C1679



Designation: C1679 – 17

Standard Practice for Measuring Hydration Kinetics of Hydraulic Cementitious Mixtures Using Isothermal Calorimetry¹

This standard is issued under the fixed designation C1679; the number immediately following original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates an editorial change since the last revision or reapproval.

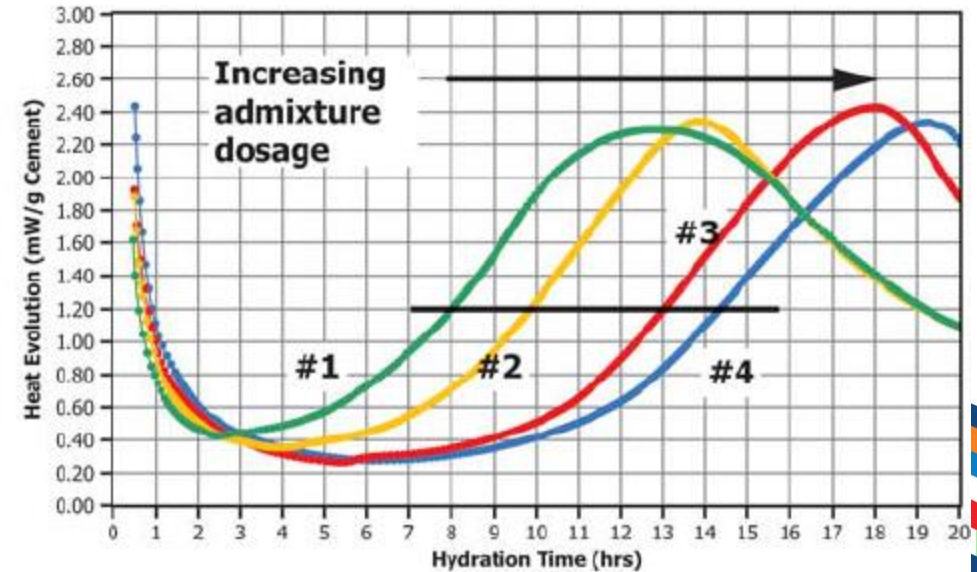
1. Scope*

1.1 This practice describes the apparatus and procedure for measuring relative differences in hydration kinetics of hydraulic cementitious mixtures, either in paste or mortar (see **Note 1**), including those containing admixtures, various supplementary cementitious materials (SCM), and other fine materials by measuring the thermal power using an isothermal calorimeter.

Note 1. Paste specimens are often preferred for mechanistic research.

2. Referenced Documents

- 2.1 *ASTM Standards*
 - C125 Terminology
 - C172/C172M Practice for Sampling and Testing Hydraulic Cement Mortar
 - C219 Terminology
 - C305 Practice for Measuring the Heat of Hydration of Hydraulic Cement



Test Method C1556



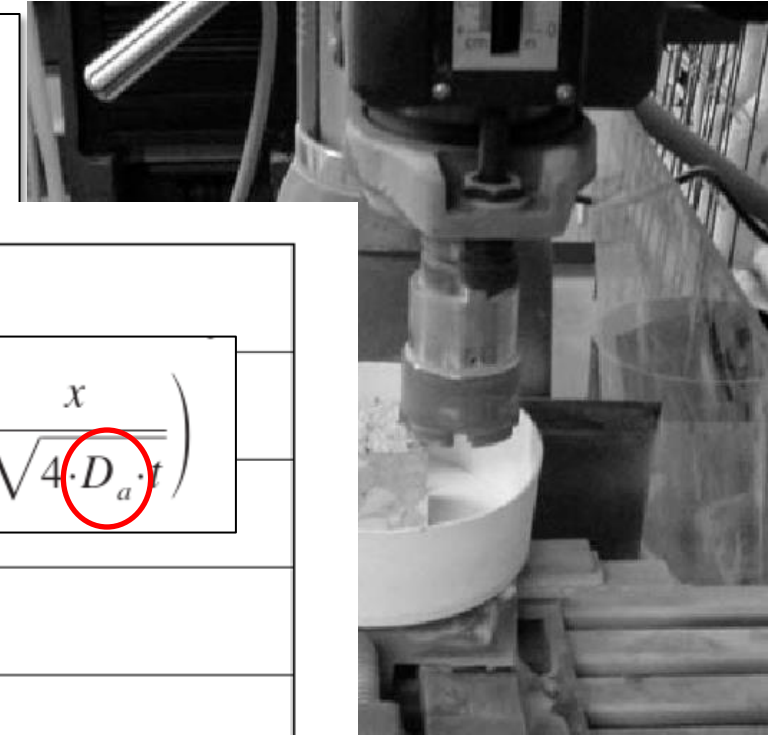
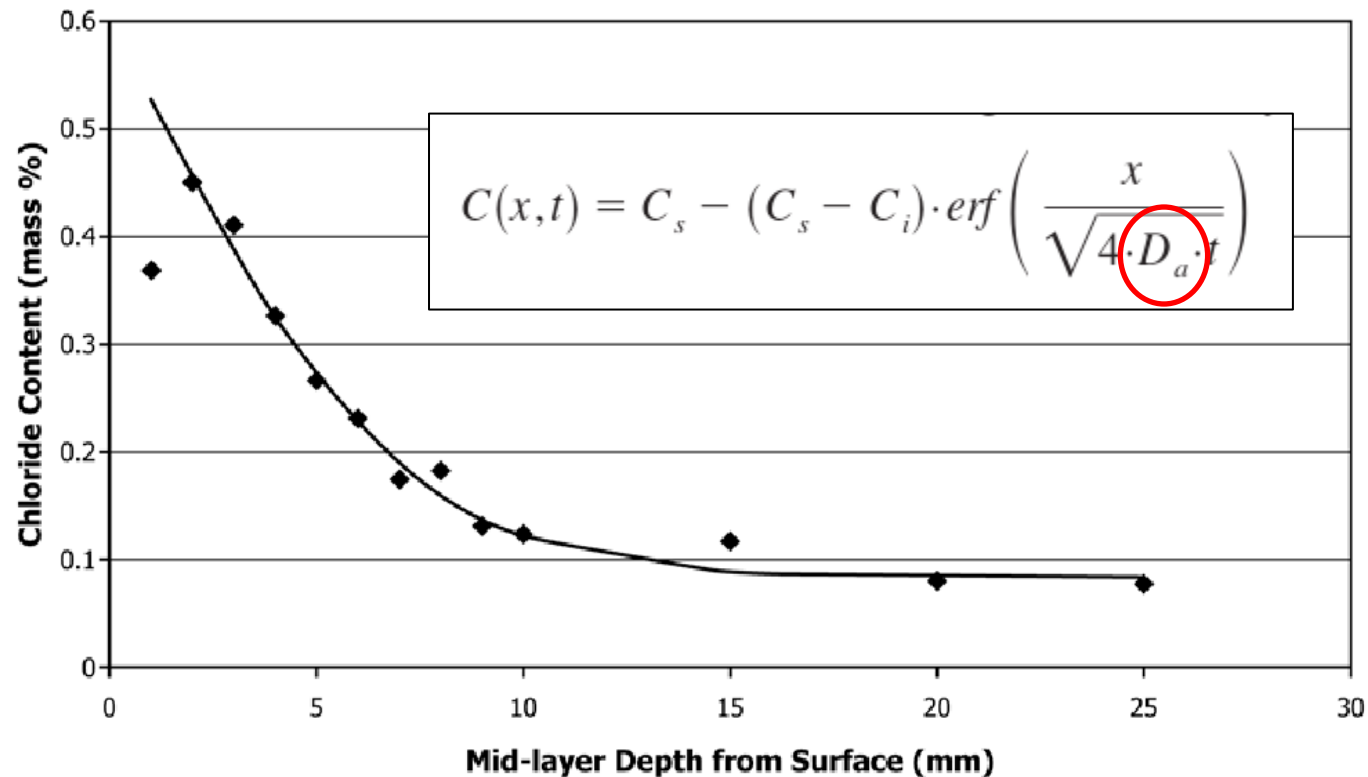
Designation: C1556 – 11a (Reapproved 2016)

Standard Test Method Determining the Apparent Chloride Diffusion Coefficient of Mortar and Concrete

This standard is issued under the fixed original adoption or, in the case of revision, the superscript epsilon (ϵ) indicates an editorial change.

1. Scope*

1.1 This test method covers the laboratory determination of the apparent chloride diffusion coefficient for concrete and mortar.



THE WORLD'S GATHERING PLACE FOR ADVANCING CONCRETE

CONCRETE
CONVENTION

C09 Awards

- Sanford E. Thompson Award for Most Meritorious Paper
- C09 Honorary Member
- ASTM Award of Merit (ASTM Fellow)
- Frank E. Richart Award
- Katharine and Bryant Mather Member Contribution Award





Scott Orthey,
thank you for
the photos!



Concluding Thoughts

- Research results are of limited value if they do not find their way into practice
- Development of new standards and updating existing standards, based on latest research, is effective means for transferring research findings to practice
- Unfortunately, universities tend to give more credit to publication of papers than standards development
- Doug has excelled in accomplishing both!

A+





Thank you, Doug