ACI 305.1M-14

An ACI Standard

Specification for Hot Weather Concreting

Reported by ACI Committee 305

American Concrete Institute
Always advancing

American Concrete Institute
Always advancing

First Printing
January 2015
ERRATA as of June 28, 2021
ISBN: 978-0-87031-977-8

Specification for Hot Weather Concreting

Copyright by the American Concrete Institute, Farmington Hills, MI. All rights reserved. This material may not be reproduced or copied, in whole or part, in any printed, mechanical, electronic, film, or other distribution and storage media, without the written consent of ACI.

The technical committees responsible for ACI committee reports and standards strive to avoid ambiguities, omissions, and errors in these documents. In spite of these efforts, the users of ACI documents occasionally find information or requirements that may be subject to more than one interpretation or may be incomplete or incorrect. Users who have suggestions for the improvement of ACI documents are requested to contact ACI via the errata website at http://concrete.org/Publications/DocumentErrata.aspx. Proper use of this document includes periodically checking for errata for the most up-to-date revisions.

ACI committee documents are intended for the use of individuals who are competent to evaluate the significance and limitations of its content and recommendations and who will accept responsibility for the application of the material it contains. Individuals who use this publication in any way assume all risk and accept total responsibility for the application and use of this information.

All information in this publication is provided “as is” without warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose or non-infringement.

ACI and its members disclaim liability for damages of any kind, including any special, indirect, incidental, or consequential damages, including without limitation, lost revenues or lost profits, which may result from the use of this publication.

It is the responsibility of the user of this document to establish health and safety practices appropriate to the specific circumstances involved with its use. ACI does not make any representations with regard to health and safety issues and the use of this document. The user must determine the applicability of all regulatory limitations before applying the document and must comply with all applicable laws and regulations, including but not limited to, United States Occupational Safety and Health Administration (OSHA) health and safety standards.

Participation by governmental representatives in the work of the American Concrete Institute and in the development of Institute standards does not constitute governmental endorsement of ACI or the standards that it develops.

Order information: ACI documents are available in print, by download, on CD-ROM, through electronic subscription, or reprint and may be obtained by contacting ACI.

Most ACI standards and committee reports are gathered together in the annually revised ACI Manual of Concrete Practice (MCP).

American Concrete Institute
38800 Country Club Drive
Farmington Hills, MI 48331
Phone: +1.248.848.3700
Fax: +1.248.848.3701

www.concrete.org

ACI 305.1M-14

Specification for Hot Weather Concreting

An ACI Standard

Reported by ACI Committee 305

G. Terry Harris Sr., Chair

Oscar R. Antommattei, Secretary

James M. Aldred
Godwin Q. Amekuedi
Philip Brandt
James N. Cornell II
D. Gene Daniel
Kirk K. Deadrick
Darrell F. Elliot
Michael Faubel
Antonio J. Guerra
Kenneth C. Hover
Frank A. Kozeliski
Darmawan Ludirdja
David R. Nau
Jonathan L. Poole
Robert J. Ryan
Bruce G. Smith
Boris Y. Stein
Diep T. Tu

Consulting Members
Richard D. Gaynor
William C. Moore
George V. Teodoru

The official version of this ACI document uses inch-pound units. A conversion of an ACI document into SI units is for the convenience of users. Care has been taken to ensure that the conversion is correct; however, ACI does not guarantee its accuracy. Official interpretation of this ACI document shall be based only on the U.S. customary units.

This reference specification provides requirements for hot weather concreting that the architect/engineer can apply to any construction project involving hot weather concreting by citing it in the project specification. Checklists are provided to assist the architect/engineer in supplementing the provisions of this reference specification as needed by designating or specifying customized project requirements.

This specification includes hot weather requirements for production preparations, delivery, placement, finishing, bleed-water evaporation, curing, and concrete protection. Provisions governing a preplacement conference, concrete mixture proportions, maximum allowable concrete temperature, rate of surface evaporation measurements, evaporation control measures, and acceptance of a concrete mixture from past field experience or preconstruction testing are also included.

The materials, processes, quality control measures, and inspections described in this document should be tested, monitored, or performed as applicable only by individuals holding the appropriate ACI Certifications or equivalent.

Keywords: bleeding; curing; evaporation; finishing; mixture proportioning; plastic shrinkage cracking; protection period; trial batch.

CONTENTS

(mandatory portion follows)

SECTION 1—GENERAL, p. 2
1.1—Scope, p. 2
1.2—Definitions, p. 2
1.3—Reference Standards, p. 2
1.4—Submittals, p. 2
1.5—Quality assurance, quality control, and acceptance of work, p. 3

SECTION 2—PRODUCTS, p. 3
2.1—General, p. 3

SECTION 3—EXECUTION, p. 3
3.1—General, p. 3
3.2—Maximum temperature of fresh concrete at time of discharge, p. 3
3.3—Qualification of concrete mixture, p. 3
3.4—Concrete production and delivery, p. 4
3.5—Concrete placement and finishing, p. 4
3.6—Concrete bleed-water evaporation, p. 4
3.7—Concrete curing, p. 4
3.8—Concrete protection, p. 4

(nonmandatory portion follows)

NOTES TO SPECIFIER, p. 4
General notes, p. 4
Foreword to checklists, p. 5

APPENDIX A—EXAMPLE OF UNO EQUATION USED TO DETERMINE SURFACE EVAPORATION RATE OF FRESH CONCRETE, p. 6
Example: Uno equation, p. 6

ACI 305.1M-14 supersedes ACI 305.1-06 and was adopted June 16, 2014 and published January 2015.

Copyright © 2014, American Concrete Institute.

All rights reserved including rights of reproduction and use in any form or by any means, including the making of copies by any photo process, or by electronic or mechanical device, printed, written, or oral, or recording for sound or visual reproduction or for use in any knowledge or retrieval system or device, unless permission in writing is obtained from the copyright proprietors.