

An ACI Standard

Specification for Construction of Pervious Concrete Pavement

Reported by ACI Committee 522

ACI 522.1-20



American Concrete Institute
Always advancing



Specification for Construction of Pervious Concrete Pavement

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, through electronic subscription, or reprint, and may be obtained by contacting ACI.

ACI codes, specifications, and practices are made available in the ACI Collection of Concrete Codes, Specifications, and Practices. The online subscription to the ACI Collection is always updated, and includes current and historical versions of ACI’s codes and specifications (in both inch-pound and SI units) plus new titles as they are published. The ACI Collection is also available as an eight-volume set of books and a USB drive.

American Concrete Institute
30300 Country Club Drive
Farmington Hills, MI 48331
Phone: +1.248.848.3700
Fax: +1.248.848.3701

Specification for Construction of Pervious Concrete Pavement

An ACI Standard

Reported by ACI Committee 522

Norbert J. Delatte, Chair

John T. Kevern, Vice Chair

Bob J. Banka
Daniel T. Biddle
William D. Brant
Heather J. Brown
John F. Cook
Bernard J. Eckholdt III
Aly Ibrahim Eldarwish
Scott J. Erickson
Dale Fisher

Walter H. Flood, IV
Bruce A. Glaspey
Liv Haselbach
Amanda H. Hult
Frank A. Kozeliski
David Liguori
Jesse L. Long
Allyn C. Luke
Brian Lutey

Kamyar C. Mahboub
Steven L. Mallicoat
Luis A. Mata
Somayeh Neiri
Narayanan Neithalath
Matthew A. Offenber
G. S. Ooi
Thomas Kozsits
George W. Seegebrecht

David R. Smith
Alan Sparkman
Christopher R. Tull
Robert L. Varner
Charles A. Weiss Jr.
Jason D. Wimberly
Peter T. Yen

Consulting members

Manoj Chopra
Bruce K. Ferguson

Daniel J. Huffman
Scott M. Palotta

Stephen F. Rohrbach
Joseph E. Rottman

Andy K. Youngs

This Specification covers minimum requirements for the construction of pervious concrete pavement. This Specification covers materials, preparation, forming, placing, finishing, jointing, curing, and quality control of pervious concrete pavement. Provisions governing testing, evaluation, and acceptance of pervious concrete pavement are included.

Keywords: construction; curing; inspection; jointing; parking lots; testing.

CONTENTS

(mandatory portion follows)

PART 1—GENERAL, p. 2

- 1.1—Scope, p. 2
- 1.2—Interpretation, p. 2
- 1.3—Definitions, p. 2
- 1.4—Referenced standards, p. 3
- 1.5—Submittals, p. 3
- 1.6—Quality assurance and quality control, p. 3

PART 2—PRODUCTS, p. 4

- 2.1—Subbase, p. 4
- 2.2—Pervious concrete, p. 4
- 2.3—Isolation joint material, p. 5
- 2.4—Forms, p. 5
- 2.5—Curing materials, p. 5

ACI Committee Reports, Guides, and Commentaries are intended to provide guidance in planning, designing, executing, and inspecting construction. This document is 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. The American Concrete Institute disclaims any and all responsibility for the stated principles. The Institute shall not be liable for any loss or damage arising therefrom.

Reference to this document shall not be made in contract documents. If items found in this document are desired by the Architect/Engineer to be a part of the contract documents, they shall be restated in mandatory language for incorporation by the Architect/Engineer.

ACI 522.1-20 supersedes ACI 522.1-13, became effective May 15, 2020, and was published November 2020.

Copyright © 2020, 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.

PART 3—EXECUTION, p. 5

- 3.1—Subgrade preparation, p. 5
- 3.2—Subbase, p. 5
- 3.3—Setting formwork, p. 5
- 3.4—Batching, mixing, and delivery, p. 5
- 3.5—Placing and finishing fixed-form pavement, p. 5
- 3.6—Placing and finishing slipform pavement, p. 5
- 3.7—Edging, p. 6
- 3.8—Final surface texture, p. 6
- 3.9—Jointing, p. 6
- 3.10—Curing, p. 6
- 3.11—Hot or cold weather construction, p. 6
- 3.12—Tolerances, p. 6
- 3.13—Opening to traffic, p. 6

NOTES TO SPECIFIER (nonmandatory), p. 6

General notes, p. 6

FOREWORD TO CHECKLISTS, p. 6**PART 1—GENERAL****1.1—Scope**

1.1.1 This Specification covers construction of pervious concrete pavement.

1.1.2 This Specification is incorporated by Contract Documents and provides requirements for the Contractor.

1.1.3 This Specification governs for construction within its scope, except project-specific Contract Documents govern if there is a conflict.

1.1.4 This Specification governs if there is a conflict with referenced material and testing standards.

1.1.5 Contractor is permitted to submit written alternatives to any provision in this Specification for consideration.

1.1.6 Ignore provisions of this specification that are not applicable to the Work.

1.1.7 Values in this Specification are stated in both-pound units. A companion specification in SI units is available.

1.1.8 The Notes to Specifier are a part of this Specification.

1.2—Interpretation

1.2.1 Unless otherwise explicitly stated, this Specification shall be interpreted using the following principles.

1.2.1.1 Interpret this Specification consistent with the plain meaning of the words and terms used.

1.2.1.2 Definitions provided in this Specification govern over the definitions of the same or similar words or terms found elsewhere.

1.2.1.3 Whenever possible, interpret this Specification so that its provisions are in harmony and do not conflict.

1.2.1.4 Headings are part of this Specification and are intended to identify the scope of the provisions or sections that follow. If there is a difference in meaning or implication between the text of a provision and a heading, the meaning of the text governs.

1.2.1.5 Where a provision of this Specification involves two or more items, conditions, requirements, or events

connected by the conjunctions “and” or “or,” interpret the conjunction as follows: “and” indicates that all of the connected items, conditions, requirements, or events apply; “or” indicates that the connected items, conditions, requirements, or events apply singularly.

1.2.1.6 The use of the verbs “may” or “will” indicates that the Specification provision is for information to Contractor.

1.2.1.7 The phrase “as indicated in Contract Documents” means the specifier included the provision requirements in Contract Documents.

1.2.1.8 The phrase “unless otherwise specified” means the specifier may have included an alternative to the default requirement in Contract Documents.

1.2.1.9 The phrase “if specified” means the specifier may have included a requirement in Contract Documents for which there is no default requirement in this Specification.

1.3—Definitions

The following definitions govern this specification.

accepted—determined by Architect/Engineer to be in compliance with Contract Documents.

Contract Documents—set of documents that form the basis of a contractual relationship between an Owner and contractor or design-builder. These documents are defined by the contractual agreement and often contain contract forms, contract conditions, specifications, drawings, addenda, and contract changes.

Contractor—the person, firm, or entity under contract for construction of the Work.

contraction joint—sawed or tooled groove in a concrete pavement to create a weakened plane to regulate the location of cracking resulting from dimensional change of different parts of the pavement.

design void content—percentage of voids of a unit volume of pervious concrete based on the theoretical mixture proportions and design density, as tested in accordance with **ASTM C1688/C1688M**; unit volume includes the volume of the solids and the voids.

drawings—graphic presentations that detail requirements for Work and may include written notes.

extended set admixture—an admixture that can predictably stop or reduce the hydration rate of cement for applications requiring extended time of setting followed by normal strength development; also referred to as a hydration-controlling admixture or a hydration-stabilizing admixture.

hardened density—the dry density of pervious concrete determined in accordance with **ASTM C1754/C1754M**.

lot—5000 ft² of pavement.

Owner—the corporation, association, partnership, individual, public body, or authority for whom the Work is constructed.

raveling—the contiguous dislodging of surface aggregate.

submit—provide to Architect/Engineer for review.

submittal—document or material provided to Architect/Engineer for review and acceptance.

testing agency—the person, firm, or entity under contract for providing testing services.

Work—the entire construction or separately identifiable parts required to be furnished under Contract Documents.