Designation: D1985 – 13 (Reapproved 2019)

Standard Practice for Preparing Concrete Blocks for Testing Sealants, for Joints and Cracks[1]

This standard is issued under the fixed designation D1985; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers the preparation of concrete blocks used for testing of joint and crack sealants for portland cement concrete and asphaltic concrete pavements. There are numerous standard material specifications that use concrete blocks prepared according to this practice. Refer to the specific standard material specification of interest to determine which tests apply and refer to the test methods for each specific test.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are provided for information purposes only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

C33/C33M Specification for Concrete Aggregates

C150/C150M Specification for Portland Cement

C192/C192M Practice for Making and Curing Concrete Test Specimens in the Laboratory

E171/E171M Practice for Conditioning and Testing Flexible Barrier Packaging

3. Significance and Use

3.1 It is intended that this practice may be used by manufacturers, users, and testing agencies. The use of this practice establishes a uniform procedure for preparing concrete blocks for the testing of sealants. It is not intended to establish test procedures or conditions of test which are associated with each of the joint sealants.

4. Standard Conditions

4.1 The laboratory atmospheric conditions, hereinafter referred to as standard conditions, shall be in accordance with Practice E171/E171M (23 ± 2 °C (73.4 ± 3.6 °F) and 50 % ± 5 % relative humidity).

5. Concrete Block Preparation[3]

5.1 *Materials*—The aggregate shall conform to Specification C33/C33M, except as specified herein. The aggregate grading shall be as shown in Table 1. The coarse aggregate shall consist of crushed limestone (plus 95 % $CaCO_3$) having a water absorption of not more than 1.5 %. The fine aggregate shall consist of crushed limestone and shall be manufactured from the same parent rock as the coarse aggregate.[4] The portland cement shall conform to ASTM Specification C150/C150M, Type II. The concrete shall have a water-cement ratio of 0.49, a cement factor of 335 ± 30 kg/m^3 (6.0 ± 0.5 bags of cement per cubic yard), and a slump of 63 ± 13 mm (2½ ± ½ in.). The ratio of fine aggregate to total aggregate shall be approximately 40 % by solid volume. The air content shall be 5.0 ± 0.5 % and shall be obtained by the addition to the batch of an air-entraining agent. Prepare the concrete in accordance with the procedure described in Practice C192/C192M.

5.1.1 *Alternate Block Materials*—As an alternate to the materials specified in 5.1, the blocks may be prepared using a

[1] This practice is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.33 on Formed In-Place Sealants for Joints and Cracks in Pavements.

Current edition approved June 15, 2019. Published June 2019. Originally approved in 1991. Last previous edition approved in 2013 as D1985 – 13. DOI: 10.1520/D1985-13R19.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] The sole source of supply of blocks made to this specification are available from USAE Laboratory, Missouri River Division, 429 S18th Street, Omaha, NE 68101. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,[1] which you may attend.

[4] The sole source of supply of aggregate meeting this specification is available from Pete Lien & Sons Inc., P.O. Box 440, Rapid City, SD. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,[1] which you may attend.