



Standard Guide for Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems¹

This standard is issued under the fixed designation D 5295; 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 guide provides recommendations for the preparation of concrete surfaces prior to the application of adhered (bonded) waterproofing.

1.2 This guide is directed primarily toward installations of new concrete, but is also applicable for existing concrete installations. (See also ACI 116 and ACI 546.)

1.3 This guide does not apply to loose laid systems, bentonite systems, lead, or the like.

1.4 This guide does not apply to applications involving insulating concrete.

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

1.6 *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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

D 1079 Terminology Relating to Roofing, Waterproofing, and Bituminous Materials²

D 4262 Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces³

D 4263 Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method³

2.2 ACI Standards:

ACI 116 Cement and Concrete Terminology⁴

ACI 301 Specifications for Structural Concrete for Buildings⁴

ACI 311 Guide to Inspection of Concrete⁴

ACI 515 A Guide to the Use of Waterproofing, Dampproofing, Protective and Decorative Barrier Systems for Concrete⁴

ACI 546 Repair of Concrete⁴

3. Significance and Use

3.1 The success of a waterproofing application depends on, among other things, the type, smoothness, and cleanliness of the concrete surface being coated. This guide describes conditioning or repairing of the concrete surface by the removal or other constructive modification of those surface defects that can affect the performance of the waterproofing system. It also covers surface preparation by chemical and blast cleaning methods in order to provide good adhesion between the waterproofing system and the concrete as well as the effect and control of various surface contaminants. (See also ACI 515.)

3.2 This guide is not intended to offer guidelines for the selection of a suitable waterproofing system; the use of specific application techniques; or the design and installation of flashing, terminations, expansion joint details, etc. (For definitions of terms, see Terminology D 1079.)

3.3 The recommended procedures described herein are minimums; the waterproofing materials manufacturer may require more strict or specific procedures for the preparation of concrete surfaces for the application of the manufacturer's specific system.

4. Adhesion Inhibitors

4.1 *General*—Among the items that inhibit the adhesion of membrane waterproofing systems are form release agents, concrete curing compounds, admixtures, laitance, moisture, and grease or oils.

4.2 Form release agents, such as oil, grease, wax, and silicones, will transfer to the surface of the concrete during casting. These will cause poor adhesion of waterproofing systems. Since these are almost invisible, it is difficult to detect their presence. Any procedure for the removal of such materials will be specific to that material. Proprietary form coating materials should be accepted prior to use and after evaluation by the specifier to determine that they are appropriate for use with the proposed waterproofing materials and systems. Proprietary paint systems applied to the forms that are non-transferable and formulated to prevent contamination of the concrete surface should be used.

4.3 Concrete curing compounds may contain waxes, resins, chlorinated rubber, or film formers of various types. If such materials must be used, the specifier should be certain that the

¹ This guide is under the jurisdiction of ASTM Committee D08 on Roofing, Waterproofing, and Bituminous Materials and is the direct responsibility of Subcommittee D08.22 on Waterproofing and Dampproofing Systems.

Current edition approved Nov. 10, 2000. Published January 2001. Originally published as D 5295 – 92. Last previous edition D 5295 – 92 (1998)^{ε1}.

² *Annual Book of ASTM Standards*, Vol 04.04.

³ *Annual Book of ASTM Standards*, Vol 06.01.

⁴ Available from American Concrete Institute, P.O. Box 19150, Redford Station, Detroit, MI 48219.