



Designation: D4259 – 24

Standard Practice for Preparation of Concrete by Abrasion Prior to Coating Application¹

This standard is issued under the fixed designation D4259; 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 includes surface preparation of concrete to prepare the surface prior to the application of coatings.

1.2 This practice is intended to create a surface profile in concrete and to remove foreign materials and weak surface laitance.

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

C1583 Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method)

D4258 Practice for Surface Cleaning Concrete for Coating
D4285 Practice for Indicating Oil or Water in Compressed Air

D4538 Terminology Relating to Protective Coating and Lining Work for Power Generation Facilities

D8271 Test Method for the Direct Measurement of Surface Profile of Prepared Concrete

2.2 *ACI Standard:*³

ACI-308 Guide to Curing Concrete

2.3 *ICRI Standard:*⁴

ICRI Guideline No. 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair

2.4 *AMPP Standards:*⁵

AMPP 21513 Procedure for Determining Conformance to Concrete Surface Profile Requirements

3. Terminology

3.1 *Definitions:*

3.1.1 Definitions for use with this standard are shown in Terminology **D4538** or other applicable standards.

4. Summary of Practice

4.1 This practice is intended to provide instruction on steps to achieve a clean, contamination-free, and roughened surface.

4.2 Acceptable surfaces shall be free of laitance, form release agents, curing agents, oil, grease, and other contaminants. The surface shall be free of fins, projections and loosely adhering concrete, dirt, and dust particles.

4.3 For some applications, a minimum concrete surface strength may be required for proper coating performance. If required, test in accordance with the procedures described in Test Method **C1583**.

4.4 Acceptable methods of preparation include abrasive blasting (wet or dry), mechanical abrading, water jetting, and other similar procedures that will alter the surface profile of the concrete.

5. Significance and Use

5.1 The procedures described herein are used to prepare concrete for coatings where optimum bond is desired for

¹ This practice is under the jurisdiction of ASTM Committee **D01** on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee **D01.46** on Industrial Protective Coatings.

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

³ Available from American Concrete Institute (ACI), P.O. Box 9094, Farmington Hills, MI 48333-9094, <http://www.aci-int.org>.

⁴ International Concrete Repair Institute, Inc. (ICRI), 1000 Westgate Dr., Ste. 252, St. Paul, MN 55114. www.icri.org.

⁵ Available from Association of Materials Protection and Performance (AMPP), 800 Trumbull Dr., Pittsburgh, PA 15205, <http://www.ampp.org>.