



Designation: D4258 – 05

Standard Practice for Surface Cleaning Concrete for Coating¹

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1. Scope

1.1 This practice includes surface cleaning of concrete to remove grease, dirt, and loose material prior to the application of coatings. Procedures include broom cleaning, vacuum cleaning, air blast cleaning, water cleaning, detergent water cleaning, and steam cleaning.

1.2 This practice is not intended to alter the surface profile of the concrete but to clean the surface.

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 and health practices and determine the applicability of regulatory limitations prior to use.* For specific hazard statements, see Section 5.

2. Referenced Documents

2.1 *ASTM Standards:*²

D4259 Practice for Abrading Concrete

D4260 Practice for Liquid and Gelled Acid Etching of Concrete

D4262 Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces

D4263 Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method

D4285 Test Method for Indicating Oil or Water in Compressed Air

2.2 *Other Standard:*

ACI-308 Recommended Practice for Curing Concrete³

3. Summary of Practice

3.1 Surface cleaning is intended to provide a clean, contamination-free surface without removing concrete from intact, sound surfaces.

¹ This practice is under the jurisdiction of ASTM Committee D33 on Protective Coating and Lining Work for Power Generation Facilities and is the direct responsibility of Subcommittee D33.05 on Application and Surface Preparation.

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

3.2 Acceptable surfaces shall be free of oil, grease, loosely adhering concrete, and other contamination. Fins and projections shall be corrected prior to surface cleaning.

3.3 Air, water cleaning, scrubbing, sweeping, or vacuuming are acceptable cleaning methods. Cleaning agents may also be used to remove oil and grease spots followed by a fresh water rinse.

3.4 Any one or a combination of the listed cleaning procedures may be used to achieve acceptably cleaned surfaces.

4. Significance and Use

4.1 Surface cleaning is used to prepare concrete surfaces for applying coatings intended for light-duty service.

4.2 Use of this practice alone is not intended where protective systems will be used for continuous or intermittent immersion, mechanical loading, or for protective systems needing optimum bond for satisfactory performance (see Practices D4259 and D4260).

5. Hazards

5.1 New concrete shall be cured according to ACI-308 and sufficient additional time allowed for drying.

5.2 Moisture in the concrete may be detrimental to coating adhesion. Moisture content shall be in compliance with coating manufacturer's recommendation (see Test Method D4263).

5.3 Concrete cure compounds, form release materials, or concrete hardeners not compatible with the coating may require removal by other surface preparation methods as in Practices D4259 and D4260.

6. Procedures

6.1 *Broom Cleaning:*

6.1.1 This procedure is intended to remove most surface dust and other loosely adherent solid contaminants.

6.1.2 Broom cleaning shall consist of sweeping the surface with a clean industrial stiff-bristled broom or similar device. Sweepings shall be removed from the immediate work area.

6.1.3 Broom-cleaned surfaces require additional cleaning using one or more of the surface preparation procedures specified in 6.2-6.6.

6.2 *Vacuum Cleaning:*

6.2.1 This cleaning procedure is intended to remove surface dust and other debris.