



Designation: D 4258 – 83 (Reapproved 1999)

## Standard Practice for Surface Cleaning Concrete for Coating<sup>1</sup>

This standard is issued under the fixed designation D 4258; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 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:

D 4259 Practice for Abrading Concrete<sup>2</sup>

D 4260 Practice for Acid Etching Concrete<sup>2</sup>

D 4262 Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces<sup>2</sup>

D 4263 Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method<sup>2</sup>

D 4285 Test Method for Indicating Oil or Water in Compressed Air<sup>2</sup>

#### 2.2 Other Standard:

ACI-308 Recommended Practice for Curing Concrete<sup>3</sup>

### 3. Summary of Practice

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

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 D 4259 and D 4260).

### 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 D 4263).

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 Practice D 4259.

### 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.

6.2.2 Vacuum cleaning shall consist of vacuuming the surface with a heavy-duty type industrial vacuum to provide an essentially dust-free surface.

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee D-33 on Protective Coating and Lining Work for Power Generating Facilities and is the direct responsibility of Subcommittee D33.05 on Surface Preparation.

Current edition approved June 24, 1983. Published November 1983.

<sup>2</sup> *Annual Book of ASTM Standards*, Vol 06.02.

<sup>3</sup> Available from American Concrete Institute, 22400 W. Seven Mile Rd., Detroit, MI 48219.