Designation: D4262 – 05 (Reapproved 2012)

Standard Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces[1]

This standard is issued under the fixed designation D4262; 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 test method covers procedures for determining the acidity or alkalinity of concrete surfaces prepared by chemical cleaning or etching prior to coating.

1.2 *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. Terminology

2.1 *Definitions:*

2.1.1 *pH, n*—a measure of acidity or alkalinity of a solution or surface, with neutrality represented by a value of 7, with increasing acidity represented by smaller values, and with increasing alkalinity represented by increasing values.

3. Significance and Use

3.1 Chemical cleaning and etching is used to prepare concrete for coating.

3.2 Residual chemicals not removed by water rinsing may adversely affect the performance and adhesion of coatings applied over prepared concrete surfaces. It is the intent of this test method to determine that residual chemicals have been removed by measuring the acidity or alkalinity of the final rinsed surface.

4. Apparatus

4.1 The specific apparatus for each test is described in Annex A1-Annex A3.

5. Materials

5.1 *Potable Water,* for rinsing chemically cleaned or etched concrete surfaces.

5.2 *Wet Concrete Surface,* following the final water rinse and before the rinse water has completely drained off the surface.

6. Procedure

6.1 The preparatory actions for each alternative are described in Annex A1-Annex A3.

6.2 At least two surface pH readings shall be taken for each 500 square feet or portion thereof. Readings shall be taken at randomly selected locations immediately following the final rinse and before all the rinse water has drained off the surface.

6.3 The pH of the water used for rinsing shall be determined to establish acceptance criteria. Readings shall be taken at the beginning and end of the final rinse.

6.4 Unless otherwise specified, tests shall be conducted in accordance with this procedure.

7. Acceptance Criteria

7.1 The pH readings following the final rinse shall not be more than 1.0 pH lower or 2.0 higher than the pH of the rinse water unless otherwise specified.

8. Keywords

8.1 etched concrete surface; pH

[1] This test method 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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ANNEXES

(Mandatory Information)

A1. pH TEST PAPER, TYPE 1

A1.1 Apparatus

A1.1.1 *pH Test Paper,* with a minimum range of 1 to 11 pH units with a capability of measuring in increments of 0.5 pH units.

A1.2 Procedure

A1.2.1 Tear off a strip of test paper, wet with test water and after the color develops, compare with color chart to determine pH.

A2. pHYDRION INSTA-CHECK pH PENCIL

A2.1 Apparatus

A2.1.1 *pH Pencil,* a marking instrument capable of measuring the surface pH from 0 to 13.

A2.1.2 *Color Comparison Chart.*

A2.2 Procedure

A2.2.1 Scratch the surface of the concrete with a metallic object.

A2.2.2 Moisten the surface with distilled water.

A2.2.3 Mark over the scratch with pHydiron pencil.[2]

A2.2.4 After 15 s, compare the color with the color comparison chart.

A2.2.5 The color produced is stable for several days.

[2] The pHydrion pencil is available from Micro Essential Laboratories, Inc., 4224 Avenue H, Brooklyn, NY 11210.

A3. pH METER[3]

A3.1 Apparatus

A3.1.1 *Flat Electrode pH Pen,* with a minimum range from 0 pH to 14 pH units with the capability of measuring in increments of 0.01 pH units.

A3.2 Procedure

A3.2.1 Place the tip of the electrode into the test water. The pH reading will appear in the display.

[3] The Model PH100 and PH110 pH meter is available from ExTech Instruments, 285 Bear Hill Road, Waltham, MA 02451–1064.