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NACE No. 6/SSPC-SP 13, Surface Preparation of Concrete

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ABSTRACT

This NACE International/SSPC joint standard practice covers the preparation of concrete surfaces before the application of protective coating or lining systems. The standard includes two updated tables, Table 1 details classes of surface preparation, and Table 2 provides minimum acceptance criteria for concrete surfaces before coatings are applied and relevant test methods. The updated Appendix (nonmandatory) includes two additional tables, Table A1 provides typical surface properties of finished concrete, and Table A2 provides an extensive list of surface preparation methods for concrete surfaces. This standard should be used by specifiers, applicators, inspectors, and others who are responsible for defining a standard degree of cleanliness, strength, profile, and dryness of prepared concrete surfaces.

KEYWORDS

abrasive blasting, acid etching, cementitious repair, coating adhesion, coatings, concrete, lining systems, NACE No. 6, protective coating systems, surface preparation, spalling, surface profile, tensile strength, TG 417, vacuum cleaning, waterjetting

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Section 1: General

1.1 This NACE/SSPC standard details the requirements for surface preparation of concrete by mechanical and chemical methods before the application of bonded protective coating or lining systems.

1.2 The standard details specific methods of surface preparation as well as the amount of surface cleanliness and profile achievable by each method. The specifier is responsible for choosing the appropriate class of surface preparation from Table 1 for the intended protective coating and intended service conditions and these should be agreed upon by all parties involved (owner and/or specifier, manufacturer and contractor).

Table 1 Classes of Surface Preparation

Class	Method	Profile Range (CSP)[A]	Section Referenced
D-VC	Vacuum Cleaning	NC[B]	4.2.2
W-LP	Low Pressure Water Rinse	NC[B]	4.2.2
W-DS	Detergent Scrubbing	NC[B]	4.2.3
W-SC	Steam Cleaning	NC[B]	4.2.3
W-AE	Acid Etching	1 – 3	4.4
W-WJ	Waterjetting (includes Hydrodemolition and Hydroblasting)	3 – 10	4.3.2
M-GRD	Grinding – Dry	1 – 2	4.3.4
M-GRW	Grinding – Wet	1 – 2	4.3.4
M-ABD	Abrasive Blasting – Dry	3 – 7[A]	4.3.1
M-ABW	Abrasive Blasting – Wet	3 – 7[A]	4.3.1
M-SB	Shot Blasting	3 – 9[A]	4.3.1
M-SC	Scarifying	4 – 7	4.3.3

[A] ICRI[1] 310.2,[1] Concrete Surface Profiles (CSP); see footnote in Appendix A,Table A2.
[B] No Change

1.3 The requirements of this standard are applicable to all types of cementitious surfaces including, but not limited to, cast-in-place concrete floors and walls, precast slabs, masonry walls, shotcrete surfaces and cementitious grouts, overlayments and/or underlayments.

1.4 The composition and installation of new concrete and cementitious repair material may affect the selection and application of a coating system. It is the responsibility of the designer to specify the concrete composition, admixtures, finishing procedures, curing method or compound and form release agents; and cementitious repair materials that ensure the concrete is suitable for coating. The chemical, physical (abrasion), and environmental exposure conditions also must be defined for the appropriate coating system to be selected.

1.5 Existing concrete surfaces must be properly evaluated before the application of a coating system. It is the responsibility of the owner/specifier to assess the condition of the concrete to ensure the substrate is sound and suitable for coating.

1.6 An acceptable prepared concrete surface should be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.

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