Procedure for Determining Conformance to Concrete Surface Profile Requirements

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Document History

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Foreword

Scope:

This standard describes a procedure suitable for laboratory and field use to determine conformance to specified surface profile on concrete substrates using Method 1: Depth micrometer as described in ASTM[(1)] D8271,[1] Method 2: Concrete Surface Profile (CSP) Chips (CSP 1-10) as described in ICRI[(2)] Guideline No. 310.2R,[2] or Method 3: Replica putty as described in ASTM D7682[3] (Method 3A-visual or Method 3B-quantitative).

Rationale:

Proper bonding of coatings and linings to concrete surfaces requires proper cleaning and frequently requires the concrete to be roughened to increase the surface area. The roughness, also known as surface profile, can be imparted into concrete by abrasive or water blast cleaning, acid etching or various impact/scarifying power tools. The resulting surface profile depth can influence coating/lining adhesion and performance. Coating/lining manufacturers and/or facility owners frequently specify cleaning and roughening of the concrete surface prior to product installation. The procedure described in ASTM D8271 enables the user to quantitatively determine the profile directly from the prepared concrete surface and indicates the number of readings to obtain per location but does not prescribe the number of locations. Neither ASTM D7682 nor ICRI Guideline No. 310.2R prescribe a frequency of measurement beyond selecting *"a sufficient number of locations to characterize the surface, as specified or agreed upon between the interested parties."* This standard describes the number of locations that should be measured to characterize the entirety of the prepared surface using each of the three methods, the procedure for determining conformance to the specified surface profile range, and a procedure for determining the magnitude of non-conforming surface profile.

In AMPP standards, the terms *shall* and *must* are used to state requirements and are considered mandatory. The term *should* is used to state something that is recommended, but is not considered mandatory. The term *may* is used to state something considered optional.

(1) ASTM International (ASTM), 100 Barr Harbor Dr., PO Box C700, West Conshohocken, PA 19428-2959. www.astm.org.
(2) International Concrete Repair Institute, Inc. (ICRI), 1000 Westgate Dr., Ste. 252, St. Paul, MN 55114. www.icri.org.

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