



Designation: D8104 – 17 (Reapproved 2023)

Standard Guide for Determining Coating Qualification Test Data Applicability¹

This standard is issued under the fixed designation D8104; 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 The purpose of this guide is to identify evaluation variables that can be used to determine whether existing coating qualification test data (for example, design basis accident or DBA, chemical resistance, fire resistance, thermal conductivity, etc.) meet the respective nuclear power plant qualification requirements or whether requalification is required. Guidance on developing a coating qualification test plan/procedure to qualify a new coating is beyond the scope of this standard.

1.2 This guide is intended for use in new construction and for refurbishing existing coating systems applied to concrete and metal substrates within containment.

1.3 This guide is intended for the use by, or under the supervision of, a person knowledgeable in coating technology and coatings used in CSL I applications, such as a person meeting the requirements of Guide [D7108](#) or equivalent.

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.5 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

¹ This guide 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 [D33.02](#) on Service and Material Parameters.

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2. Referenced Documents

2.1 ASTM Standards:²

- [D3911](#) Test Method for Evaluating Coatings Used in Light-Water Nuclear Power Plants at Simulated Design Basis Accident (DBA) Conditions
- [D4060](#) Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser
- [D4082](#) Test Method for Effects of Gamma Radiation on Coatings for Use in Nuclear Power Plants
- [D4258](#) Practice for Surface Cleaning Concrete for Coating
- [D4259](#) Practice for Preparation of Concrete by Abrasion Prior to Coating Application
- [D4260](#) Practice for Liquid and Gelled Acid Etching of Concrete
- [D4538](#) Terminology Relating to Protective Coating and Lining Work for Power Generation Facilities
- [D4541](#) Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers
- [D5139](#) Specification for Sample Preparation for Qualification Testing of Coatings to be Used in Nuclear Power Plants
- [D5144](#) Guide for Use of Protective Coating Standards in Nuclear Power Plants
- [D7108](#) Guide for Establishing Qualifications for a Nuclear Coatings Specialist
- [E84](#) Test Method for Surface Burning Characteristics of Building Materials
- [E1269](#) Test Method for Determining Specific Heat Capacity by Differential Scanning Calorimetry
- [E1530](#) Test Method for Evaluating the Resistance to Thermal Transmission by the Guarded Heat Flow Meter Technique
- [G14](#) Test Method for Impact Resistance of Pipeline Coatings (Falling Weight Test)

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.