



Designation: D7013/D7013M – 23

Standard Guide for Calibration Facility Setup for Nuclear Surface Gauges¹

This standard is issued under the fixed designation D7013/D7013M; 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 guide outlines procedures for setup of a nuclear gauge calibration facility in either a shielded bay or an unshielded area—Guide A and Guide B, respectively.

1.2 This guide does not attempt to describe the calibration techniques or methods. It is assumed that this guide will be used by persons familiar with the operations of the gauge and in performing proper calibration, service and maintenance.

1.3 This guide does not attempt to address maintenance or service procedures related to the gauge.

1.4 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the 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 guide offers an organized collection of information or a series of options and does not recommend a specific course of action. This document cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of this guide may be applicable in all circumstances. This ASTM standard is not intended to represent or replace the standard of care by which the adequacy of a given professional service must be judged, nor should this document be applied without consideration of a project's many unique aspects. The word "Standard" in the title of this document has been approved through ASTM consensus process.*

1.7 *All observed and calculated values shall conform to the guidelines for significant digits and rounding established in practice D6026.*

¹ This guide is under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.08 on Special and Construction Control Tests.

Current edition approved Feb. 15, 2023. Published March 2023. Originally approved in 2004. Last previous edition approved in 2015 as D7013–15. DOI: 10.1520/D7013_D7013M-23.

1.7.1 *The method used to specify how data are collected, calculated, or recorded in this standard is not directly related to the accuracy to which the data can be applied in the design or other uses, or both. How one applies the results obtained using this standard is beyond its scope.*

1.8 *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.*

2. Referenced Documents

2.1 ASTM Standards:²

D653 Terminology Relating to Soil, Rock, and Contained Fluids

D3740 Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

D6026 Practice for Using Significant Digits and Data Records in Geotechnical Data

D6938 Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

3. Terminology

3.1 For definitions of common technical terms in this standard, refer to Terminology D653.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *cinder block*—a hollow building block made with concrete and coal cinders.

3.2.2 *solid concrete blocks*—solid concrete blocks designed for areas requiring radiation shielding.

3.2.3 *safe position*—position of the density source during the standardization process of the gauge.

3.2.4 *shielded calibration bay*—an enclosed area surrounded by walls in order to reduce background radiation to an acceptable level.

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.

*A Summary of Changes section appears at the end of this standard