



Standard Test Method for Determining Rock Quality Designation (RQD) of Rock Core¹

This standard is issued under the fixed designation D6032; 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 the determination of the rock quality designation (RQD) as a standard parameter in drill core logging.

1.2 All observed and calculated values shall conform to the guidelines for significant digits and rounding established in Practice [D6026](#).

1.2.1 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 design or other uses, or both. How one applies the results obtained using this standard is beyond its scope.

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

1.4 *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. Referenced Documents

2.1 ASTM Standards:²

[D653 Terminology Relating to Soil, Rock, and Contained Fluids](#)

[D2113 Practice for Rock Core Drilling and Sampling of Rock for Site Exploration](#)

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

[D5079 Practices for Preserving and Transporting Rock Core Samples](#)

[D6026 Practice for Using Significant Digits in Geotechnical Data](#)

[E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method](#)

3. Terminology

3.1 For terminology used in this test method, refer to Terminology [D653](#).

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *core run*—in the most basic usage, the length of the interval measured from the depth each core sample was started to the depth at which drilling stopped and the sample was recovered from the core barrel. If required, the core run can also be defined to cover a specific length or lithology in the core samples.

3.2.2 *drill break*—any mechanical or man-made break in the core that is not natural occurring.

3.2.3 *intact core*—any segment of core between two open, natural discontinuities.

3.2.4 *rock quality designation (RQD)*—a modified core recovery percentage in which all pieces of sound core over 100 mm are counted as recovery.

3.2.5 *sound core*—any core which is fresh to moderately weathered and which has sufficient strength to resist hand breakage.

4. Summary of Test Method

4.1 The RQD denotes the percentage of intact and sound rock retrieved from a borehole of any orientation. All pieces of intact and sound rock core equal to or greater than 100 mm (4 in.) long are summed and divided by the total length of the core run, as shown in [Fig. 1](#). Rock mechanics judgement may be necessary to determine if a piece of core qualifies as being intact and sound.

5. Significance and Use

5.1 The RQD was first introduced in the mid 1960s to provide a simple and inexpensive general indication of rock mass quality to predict tunnelling conditions and support requirements. The recording of RQD has since become virtually standard practice in drill core logging for a wide variety of geotechnical investigations.

¹ This test method is under the jurisdiction of ASTM Committee [D18](#) on Soil and Rock and is the direct responsibility of Subcommittee [D18.12](#) on Rock Mechanics. Current edition approved July 1, 2008. Published July 2008. Originally approved in 1996. Last previous edition approved in 2006 as D6032 – 02 (2006). DOI: 10.1520/D6032-08.

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.