



Standard Test Method for Abrasion Resistance of Dimension Stone Subjected to Foot Traffic Using a Rotary Platform Abraser¹

This standard is issued under the fixed designation C1353/C1353M; 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 establishment of an index of abrasion resistance by determination of loss of volume resulting from abrasion of dimension stone as described in Terminology C119 and is based on Guide G195.

1.2 The values stated in either inch-pound units or SI 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.

1.2.1 *Exception*—The formula for calculation of the result of this test method relies on the use of SI units; all measurements of weight in this test method shall be recorded in SI units.

1.2.2 *Exception*—As the equipment used in this test method was designed and initially fabricated using dimensions in inch-pound units, the values of equipment dimensions stated in SI units have been given as exact conversions to the nearest 0.1 mm.

1.3 This test method uses a rotary platform abraser to determine the loss in volume of dimension stone caused by abrasion under controlled conditions.

1.4 This test method is useful in indicating the differences in abrasion resistance between the various dimension stones. This test method provides one element in comparing stones of the same type.

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

¹ This test method is under the jurisdiction of ASTM Committee C18 on Dimension Stone and is the direct responsibility of Subcommittee C18.01 on Test Methods.

Current edition approved May 1, 2015. Published July 2015. Originally approved in 1996. Last previous edition approved in 2015 as C1353 –15. DOI: 10.1520/C1353_C1353M-15A.

2. Referenced Documents

2.1 ASTM Standards:²

- C97 Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone
- C119 Terminology Relating to Dimension Stone
- C121 Test Method for Water Absorption of Slate
- C1799 Guide to Dimension Stone Test Specimen Sampling and Preparation
- G195 Guide for Conducting Wear Tests Using a Rotary Platform Abraser

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *abraser*—wear testing instrument to evaluate abrasion resistance, also referred to as an abrader.

3.1.2 *abrasion cycle*—in abrasion testing, one or more movements of the abradant across a material surface, or the material surface across the abradant, that permits a return to its starting position. In the case of the rotary platform test method, it consists of one complete rotation of the specimen.

3.1.3 *index of abrasion resistance, n*—a number calculated from the weight loss of a specimen subjected to a given number of revolutions against a standard bonded abrasive wheel.

3.1.4 *resurface*—procedure of cleaning and refreshing the running surface of an abrasive wheel prior to or during use in testing.

3.1.5 *sample, n*—a geometrically regular block of stone.

3.1.6 *test specimen, n*—a flat prism of specified size and shape cut from the submitted sample.

4. Summary of Test Method

4.1 A specimen is abraded using rotary rubbing action under controlled conditions of pressure and abrasive action. The test specimen is mounted on a turntable platform and turns on a vertical axis, against the sliding rotation of two abrading wheels. One abrading wheel rubs the specimen outward toward

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.