



Designation: C 1353 – 98

Standard Test Method Using the Taber Abraser for Abrasion Resistance of Dimension Stone Subjected to Foot Traffic^{1,2}

This standard is issued under the fixed designation C 1353; 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 weight resulting from abrasion of dimension stone as described in Terminology C 119 and is modeled after Test Method C 501.

1.2 The values stated in metric units are to be regarded as the standard.

1.3 This test method makes use of a Taber abramer machine to determine the weight loss of dimension stone 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.*

2. Referenced Documents

2.1 ASTM Standards:

C 97 Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone³

C 119 Terminology Relating to Dimension Stone³

C 121 Test Method for Water Absorption of Slate³

C 501 Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser⁴

¹ This test method is under the jurisdiction of ASTM Committee C-18 on Dimension Stone and is the direct responsibility of Subcommittee C18.01 on Test Methods.

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² The Taber abramer is available in two models: the 5130 with a single head or the 5150 with dual testing heads. The 5130 machine replaces Model 503, which is a single head machine. Both machines function in the same manner. The Taber abramer and Model 200 wheel surfacer are available from Taber Instrument Corp., 455 Bryant Street, North Tonawanda, NY 14120.

³ *Annual Book of ASTM Standards*, Vol 04.07.

⁴ *Annual Book of ASTM Standards*, Vol 15.02.

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *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.

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

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

4. Summary of Test Method

4.1 This test method consists of mounting the stone specimen in suitable holders, attaching the mounted holder to the spindle of the Taber abramer, and subjecting the specimen to a prescribed number of revolutions under abrasive wheels of specified coarseness for a definite applied load. From the loss of weight due to abrasion, the abrasive wear index is calculated by a given formula.

5. Apparatus

5.1 Taber abramer machine, Model 5130 or 5150, equipped with replaceable hard abrasive H-22 Calibrade wheels that can be loaded by weights.

5.2 Table Model 200 refacing machine.

5.3 Vacuum pick up to remove the abraded material.

5.4 Revolution counter.

5.5 Balance with a capacity of 500 g (0.5 lb) and capable of reading to two decimal places.

5.6 Desiccator containing a drying agent of sufficient size to contain samples to be tested.

5.7 Diamond saw (cut-off) with diamond-edged blade lubricated with water.

5.8 Electrically powered drill capable of drilling a 6 mm (¼ in.) hole through the specimen.

5.9 A ventilated drying oven.

6. Sampling

6.1 Three stone samples 100 mm (4 in.) square and 10 mm (⅜ in.) thick shall constitute a sample and shall be chosen from material to be tested.