



Designation: C 803/C 803M – 97^{ε1}03

Standard Test Method for Penetration Resistance of Hardened Concrete¹

This standard is issued under the fixed designation C 803/C 803M; 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.

^{ε1} NOTE—Paragraph 1.2 was editorially updated in November 1999.

¹ This test method is under the jurisdiction of ASTM Committee C-9 C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.64 on Nondestructive and In-Place Testing.

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1. Scope *

1.1 This test method covers the determination of the resistance of hardened concrete to penetration by either a steel probe or pin.

1.2 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 nonconformance with the standard.

1.3 *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.* For specific hazard statements, see Section 6, 7.

2. Referenced Documents

2.1 *ASTM Standards:*

C 670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials²

C 125 Terminology Relating to Concrete and Concrete Aggregates²

2.2 *ANSI Standard:*—

A10.3 Safety Requirements for Powder Actuated Fastening Systems³

3. Summary Terminology

3.1 *Definitions:*

3.2 For definitions of Test Method

3.1 A driver delivers a known amount of energy terms used in this test method, refer to either a steel probe or pin. The penetration resistance of the concrete is determined by measuring either the exposed lengths of probes which have been driven into the concrete or by measuring the depth of the hole created by the penetration of the pins into the concrete. Terminology C 125.

4. Summary of Test Method

4.1 A driver delivers a known amount of energy to either a steel probe or pin. The penetration resistance of the concrete is determined by measuring either the exposed lengths of probes that have been driven into the concrete or by measuring the depth of the holes created by the penetration of the pins into the concrete.

5. Significance and Use

45.1 This test method may be used is applicable to assess the uniformity of concrete and to delineate zones of poor quality or deteriorated concrete in structures.

45.2 This test method may be used is applicable to estimate in-place strength, provided that a relationship has been experimentally established between penetration resistance and concrete strength. Such a relationship must be established for a given test apparatus (see also 8.9.1.5), using similar concrete materials and mixture proportions as in the structure. Use the

² Annual Book of ASTM Standards, Vol 04.02.

³ Available from American National Standards Institute (ANSI), 11 25 W. 42nd 43rd St., 13th 4th Floor, New York, NY 10036.

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