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.

Designation: D3752 – 98 (Reapproved 2019)

# Standard Test Method for Strength Imparted by Asbestos to a Cementitious Matrix[1]

This standard is issued under the fixed designation D3752; 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 measurement, on a laboratory scale, of the contribution of asbestos fibers to the strength of asbestos-cement products. The results obtained are used in the primary assessment of different fiber grades prior to their application on a larger scale.

1.2 This test method covers the determination of the modulus of rupture (*MR*), adjusted to a dry density of 1.60 Mg/m$^3$ ($MR_A$), of asbestos-cement test specimens that contain the asbestos fiber to be evaluated at a concentration of 10 mass %, whereby the degree of fiberization of that fiber is specified in terms of specific surface area as determined by Test Method D2752. The relative reinforcing value of the fiber under test is established by comparison with $MR_A$ values obtained with a fiber of known characteristics at a fiber concentration of 10 % and a dry density of 1.60 Mg/m$^3$ (1.60 g/cm$^3$).

NOTE 1—The adjusted modulus of rupture ($MR_A$) at any intermediate fiber concentration may be interpolated from results suitably determined over a limited spanning range of fiber concentrations. For example, the $MR_A$ at 10 % fiber concentration may be graphically determined from data at 3 and 17 %.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 **Warning—**Breathing of asbestos dust is hazardous. Asbestos and asbestos products present demonstrated health risks for users and for those with whom they come into contact. In addition to other precautions, when working with asbestos-cement products, minimize the dust that results. For information on the safe use of chrysotile asbestos, refer to "Safe Use of Chrysotile: A Manual on Preventive and Control Measures."[2]

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 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:*[3]

C150 Specification for Portland Cement
C184 Test Method for Fineness of Hydraulic Cement by the 150-µm (No. 100) and 75-µm (No. 200) Sieves (Withdrawn 2002)[4]
C204 Test Methods for Fineness of Hydraulic Cement by Air-Permeability Apparatus
D1193 Specification for Reagent Water
D2589 Test Method for McNett Wet Classification of Dual Asbestos Fiber
D2590 Test Method for Sampling Chrysotile Asbestos
D2752 Test Methods for Air Permeability of Asbestos Fibers
D2946 Terminology for Asbestos and Asbestos–Cement Products
D3879 Test Method for Sampling Amphibole Asbestos (Withdrawn 2009)[4]
E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods

2.2 *Other Standard:*[5]

Quebec Asbestos Mining Association (QAMA) Standard Designation for Chrysotile Asbestos Grades

## 3. Terminology

3.1 *Definitions*—For definitions of asbestos terms used in this test method, refer to Terminology D2946.

[1] This test method is under the jurisdiction of ASTM Committee C17 on Fiber-Reinforced Cement Products and is the direct responsibility of Subcommittee C17.03 on Asbestos - Cement Sheet Products and Accessories.

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[2] Available from The Asbestos Institute, http://www.chrysotile.com/en/sr_use/manual.htm.

[3] 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.

[4] The last approved version of this historical standard is referenced on www.astm.org.

[5] Available from the Asbestos Institute, 1002 Sherbrooke St. W, Suite 1750, Montreal, QC, Canada H3A 3L6.

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