



Standard Test Methods for Asbestos-Cement Flat Products¹

This standard is issued under the fixed designation C 459; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 These test methods cover only asbestos-cement flat sheets, roofing shingles, siding shingles, and clapboards.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

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.*

2. Referenced Documents

2.1 *ASTM Standards:*

E 177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods²

3. Terminology

3.1 *Definitions:*

3.1.1 *deflection*—the linear distance that a test specimen bends at the center from no load to maximum breaking load when loaded as a beam with the load applied equally and simultaneously at both one-third points of the span.

3.1.2 *flexural strength*—the average breaking load in newtons (or lbf) of dried specimens loaded as simple beams on a span of 254 mm (10 in.) with the load applied equally and simultaneously at both one-third points of the span.

4. Sampling

4.1 From each shipment or fraction thereof representing a product of the same kind, a number of sheets or units shall be selected at random. Table 1 and Table 2 show the number of sheets or units to be selected from shipments of various sizes.

5. Preparation of Test Specimens

5.1 *Flat Sheets*—Cut a pair of specimens, each $6 \pm \frac{1}{16}$ in. (152 ± 1.6 mm) in width and $12 \pm \frac{1}{16}$ in. (305 ± 1.6 mm) in

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² *Annual Book of ASTM Standards*, Vol 14.02.

TABLE 1 Sampling Plan for Flat Sheets

Number of Sheets in Shipment	Number of Sheets to Be Selected as Samples ^A
500 and under	3
501 to 1000	5
1001 to 1728	6
1729 to 2744	7
2745 to 4096	8
4097 to 5832	9
5833 to 8000	10

^A Additional sheets may be taken at the discretion of the inspector.

length, from the interior area of each sample sheet in such a manner that no edge of a specimen is less than 3 in. (76 mm) from the original edges of the sheet. The longer dimension of one of the specimens of each pair shall be parallel to the length of the sheet (that is, parallel with the fiber lay), and that of the other shall be at right angles to it. (**Warning**—When cutting asbestos-cement products minimize the dust that results. Prolonged or frequent breathing of significant airborne concentrations of silica or asbestos dust is hazardous. When such dusts are generated, effective measures shall be taken to prevent inhalation. Refer to approved techniques.)

TABLE 2 Sampling Plan for Roofing Shingles, Siding Shingles, and Clapboards

Number of Units in Shipment	Number of Units to Be Selected as Samples ^A
8 000 and under	10
8 001 to 64 000	20
64 001 to 216 000	30
216 001 to 512 000	40
512 001 to 1 000 000	50

^A Additional units may be taken at the discretion of the inspector.

5.2 *Roofing Shingles, Siding Shingles, and Clapboards*—Cut a single specimen $6 \pm \frac{1}{16}$ in. (152 ± 1.6 mm) in width and $12 \pm \frac{1}{16}$ in. (305 ± 1.6 mm) in length from each unit. Cut one half of the specimens in such a manner that the 12-in. (304.8-mm) dimension of each specimen is parallel to one edge of the shingle or clapboard unit; cut one half of the specimens at a right angle thereto. Where the shingle or clapboard units have one dimension less than 12 in., cut all specimens with the