



# Standard Specification for Asbestos-Cement Siding<sup>1</sup>

This standard is issued under the fixed designation C 223; 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 approval. A superscript epsilon ( $\epsilon$ ) 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 This specification covers asbestos-cement siding, including accessories, designed to provide the weather-exposed sidewall surfaces of buildings. Siding in the following forms is covered:

1.1.1 *Siding Shingles*—Uniform thickness, generally rectangular in shape and having wavy, random, thatched, straight, or irregular butts.

1.1.2 *Clapboards*—Uniform thickness, generally longer and narrower in shape than siding shingles, and usually with the exposed edge straight.

1.1.3 *Sheets*—Uniform thickness, rectangular in shape, larger in unit sizes than shingles or clapboards.

NOTE 1—For additional information, see Specification C 725 for Semidense Mineral Fiber Siding.

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 **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.”<sup>2</sup>

## 2. Referenced Documents

2.1 *ASTM Standards*:<sup>3</sup>

C 220 Specification for Flat Asbestos-Cement Sheets

C 458 Test Method for Organic Fiber Content of Asbestos-Cement Products

C 459 Test Methods for Asbestos-Cement Flat Products

<sup>1</sup> This specification 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.

Current edition approved May 1, 2008. Published July 2008. Originally approved in 1949. Last previous edition approved in 2003 as C 223 – 98(2003)<sup>1</sup>.

<sup>2</sup> Available from The Asbestos Institute, [http://www.chrysotile.com/en/sr\\_user/manual.htm](http://www.chrysotile.com/en/sr_user/manual.htm).

<sup>3</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

C 725 Specification for Semidense Mineral Fiber Siding

C 1096 Test Method for Determination of Wood Fiber in Asbestos Cement

2.2 *Federal Standard*:<sup>4</sup>

Fed. Std. No. 123 Marking for Domestic Shipment (Civilian Agencies)

2.3 *Military Standard*:<sup>4</sup>

MIL-STD-129 Marking for Shipment and Storage

2.4 *Other Documents*:

Uniform Freight Classification Rules<sup>5</sup>

National Motor Freight Classification Rules<sup>6</sup>

## 3. Physical Requirements

3.1 All measurements and tests necessary for determining the conformity of the asbestos-cement siding with this specification shall be made in accordance with Test Methods C 459.

3.2 *Flexural Strength*—The average breaking load obtained by loading equally and simultaneously at both one-third points of the test span as shown in Table 1.

3.3 *Deflection*—The average deflection at mid-span at maximum load obtained by loading equally and simultaneously at both one-third points of the test span as shown in Table 1.

3.4 *Water Absorption*—The average water absorption shall not exceed 30 % mass.

## 4. Dimensions, Mass, and Permissible Variations

4.1 Asbestos-cement siding supplied under this specification shall conform to the dimensions prescribed in Table 2.

4.2 The unit dimensions and laps given in Table 2 are an indication of customary current manufacture and shall not be construed to limit or fix the width, length, or lap dimensions of siding units that conform to all other requirements of this specification. Siding units of one half normal length may be supplied in an amount not exceeding two per bundle. Fifteen percent of the clapboard units may be supplied shorter than the standard length in multiples of 406 mm (16 in.).

<sup>4</sup> Available from Standardization Documents, Order Desk, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

<sup>5</sup> Available from The Uniform Classification Commission, Room 1106, 222 S. Riverside Plaza, Chicago, IL 60606.

<sup>6</sup> Available from National Motor Freight Inc., 1616 P. St., N.W., Washington, DC 20036.

**TABLE 1 Typical Dimensions of Asbestos-Cement Siding mm (in.)**

Type	Width		Minimum Top Lap <sup>A</sup>
Siding shingles	200 to 405 (8 to 16)	610 to 1220 (24 to 48)	25 (1)
Clapboards	200 to 405 (8 to 16)	1220 to 2440 (48 to 96)	25 (1)
Sheets <sup>B</sup>	405 to 1220 (16 to 48)	1220 to 3660 (48 to 144)	25 (1) unless flashed

<sup>A</sup> Top lap is defined as the shortest distance between the lower edge of a course of siding and the most proximate area of side wall not covered by the preceding course.

<sup>B</sup> Flat sheets are also covered by Specification C 220.

**TABLE 2 Physical Requirements**

Thickness				Minimum Breaking Load				Minimum Deflection	
Nominal		Minimum		Stronger Direction		Weaker Direction			
mm	(in.)	mm	(in.)	N	(lbf)	N	(lbf)	mm	(in.)
4.5	3/16	4.1	0.16	210	47	170	38	7	0.25
6	1/4	5.7	0.22	370	83	310	70	5	0.2
10	3/8	8.8	0.34	690	155	570	128	2.5	0.1

4.3 *Thickness*—The average thickness of all units supplied under this specification shall be as shown in Table 1, and the average thickness of any one unit shall not be less than the average of all units within the shipment by more than 10 %. For textured siding, the thickness shall be construed as the gross over-all measurement from the top of the textured surface to the back of the unit.

4.4 *Width and Length*—The permissible variation from the nominal width or length shall be 3.2 mm ( $\pm 1/8$  in.), as measured after 48 h at 23°C (73°F) and 50 % relative humidity.

## 5. Workmanship, Finish, and Appearance

5.1 *Workmanship*—The surface of the siding to be exposed shall be free of defects that impair appearance or serviceability.

5.2 *Finish*—The exposed surface of the siding may be smooth, grained, granuled, coated, or otherwise textured.

5.3 *Color*—The exposed surface of the siding may be natural color of the asbestos-cement product or may be colored by the addition of mineral pigments, chemical impregnation, pigmented coatings, veneers, or embedded mineral granules.

5.4 *Holes for Nails and Fasteners*—Unless otherwise specified for special application methods, holes for nails and fasteners shall be provided and shall be so placed as to satisfy the top lap requirements given in Table 2.

5.5 *Efflorescence*—Efflorescence that sometimes may appear on asbestos-cement siding is not a defect and should not result in a permanent change in color.

## 6. Nails and Fasteners

6.1 Face nails shall have small, flat heads with shanks sized to enter the face nail holes provided in the units. They shall be long enough to hold the siding units securely to a wood lumber nailing base, and be of nonstaining, corrosion-resistant material. Face nails shall be furnished with the siding by the manufacturer.

6.2 Special fasteners for attaching siding units to other than a wood lumber nailing base must be purchased separately and

are not furnished with the siding. Fasteners of this type shall be of the nonstaining corrosion-resistant type.

6.3 Baker strips in sufficient quantity and proper size for flashing the vertical joining between siding units shall be furnished by the manufacturer with the siding. These strips should be made of an asphalt-(not coal tar-)saturated and coated material. Joint flashing materials are not furnished with sheets used for siding and must be purchased separately.

## 7. Underlayment Sheet

7.1 Underlayment sheet material for use in the application of asbestos-cement siding is not furnished, but must be purchased separately.

7.2 Asphalt-saturated felt is suitable for underlayment use. Coal tar-saturated felt is not suitable. The felt shall weigh not less than 63.5 kg/100 m<sup>2</sup> (13 lb/100 ft<sup>2</sup>). Underlayment sheet material for use with asbestos-cement siding shall be water-resistant and of the “breather” type, permeable to water vapor.

## 8. Composition Requirements

8.1 Asbestos-cement siding shall be composed of a combination of asbestos fiber and portland cement or portland blast-furnace slag cement, and not more than 1 weight % of organic fiber, (as determined by Test Methods C 458 or C 1096), with or without the addition of curing agents, water-repellent substances, mineral fillers, coatings, pigments, or mineral granules, formed under pressure and cured to meet the physical requirements of this specification.

## 9. Rejection and Retesting

9.1 If the sample fails to conform to any one of the requirements of this specification, a second sample from the same lot shall be prepared and tested. The results of the retest shall be averaged with the results of the original test to determine compliance with this specification.

9.2 Failure to conform to any one of the requirements of this specification, upon retest as prescribed above, shall constitute grounds for rejection. In case of rejection, the seller shall have the right to reinspect the rejected shipment and resubmit the lot after removal of the portion of the shipment not conforming to the specified requirements, provided this is done within 20 days after receipt of notice of the specific cause for rejection.

## 10. Inspection

10.1 Inspection of material shall be made at the point of shipment. The inspector representing the purchaser shall have free access to the carriers being loaded for shipment to the purchaser. He shall be afforded all reasonable and available facilities at the point of shipment for sampling and inspection of the material, which shall be so conducted as not to interfere unnecessarily with the loading of the carriers.

## 11. Packaging and Shipping

11.1 *Commercial Quantities*—The commercial unit is approximately one square for marketing asbestos-cement siding. One square is sufficient material to cover 9.29 m<sup>2</sup> (100 ft<sup>2</sup>) of wall area when applied according to the manufacturer’s directions.



11.2 *Commercial Packaging*—Unless otherwise specified, asbestos-cement siding shall be packaged in accordance with accepted commercial practice, to ensure acceptance by common carrier.

11.3 *Job Protection*—Packages of asbestos-cement siding shall be stacked upon a raised, rigid, flat supporting base, and to avoid discoloration shall be kept completely covered, protected from the weather, clean and dry, until applied.

## 12. Keywords

12.1 asbestos; asbestos-cement; asbestos-cement siding; clapboard; sheeting; sheets; shingles; siding; siding shingles

## SUPPLEMENTARY REQUIREMENTS

The following supplementary requirements shall apply when material is supplied under this specification for U.S. Government procurement.

### S1. Packaging

S1.1 Unless otherwise specified in the contract, the material shall be packaged in accordance with the producer's standard practice which will be acceptable to the carrier at lowest rates. Containers and packing shall comply with Uniform Freight Classification Rules or National Motor Freight Classification Rules. Marking for shipment of such material shall be in accordance with **Fed. Std. No. 123** for civil agencies and **MIL-STD-129** for military agencies.

### S2. Responsibility for Inspection

S2.1 Unless otherwise specified in the contract or purchase order, the producer is responsible for the testing of all material to assure compliance with the test requirements specified herein. Except as otherwise specified in the contract or order, the producer may use his own or any other suitable facilities for the performance of the inspection and test requirements specified herein, unless disapproved by the purchaser. The purchaser shall have the right to perform any of the inspections and tests set forth in this specification where such inspections are deemed necessary to assure that material conforms to prescribed requirements.

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