

30, 1953. This flammability standard became mandatory through section 4(a) of the Flammable Fabrics Act, as amended in 1954, and remains in effect due to the savings clause (section 11) of Pub. L. 90-189. 16 CFR part 1609 contains the text of the Flammable Fabrics Act of 1953, as amended in 1954.

AUTHORITY: 16 U.S.C. 1191-1204, unless otherwise noted.

Subpart A—The Standard

AUTHORITY: Sec. 5, Pub. L. 83-88, 67 Stat. 112, as amended, 68 Stat. 770 (15 U.S.C. 1193); sec. 11, Pub. L. 90-189, 81 Stat. 568.

NOTE: All fabrics of natural or regenerated cellulose, as well as certain types of finished and unfinished fabrics made from other natural or synthetic fibers, are combustible. Some combustible fabrics, when used for clothing, are potentially dangerous to the wearer because of the speed and intensity of flame with which those fabrics burn and their ease of ignition, and because of the design of the garment. Two of these factors, the ease of ignition and the speed of flame spread, can be measured with the instrument described herein.

It is suggested that measurement of these two factors, together with visual observation of flame intensity, will permit the separation of various fabrics into three classes of flammability, thus assisting in a judgment of fabric suitability for clothing.

§ 1610.1 Purpose.

The purpose of this standard is to reduce danger of injury and loss of life by providing, on a national basis, standard methods of testing and rating the flammability of textiles and textile products for clothing use, thereby discouraging the use of any dangerously flammable clothing textiles.

§ 1610.2 Scope.

(a) The standard provides methods of testing the flammability of clothing and textiles intended to be used for clothing,^{1,a,b} establishes three classes of flammability, sets forth the require-

¹Hereinafter, "clothing and textiles intended to be used for clothing" shall be referred to as "textiles."

^aAll the numbered footnotes are from the original printing by the Department of Commerce. All the lettered footnotes are new.

^bRefer to sections 2 and 4 of the Flammable Fabrics Act of 1953, as amended in 1954, set out at 16 CFR part 1609, for the scope of the Standard.

ments which textiles shall meet to be so classified, and warns against the use of those textiles which have burning characteristics unsuitable for clothing.

(b) *Specific exceptions*— This standard shall not apply to:

- (1) Hats, gloves, and footwear.^c
- (2) Interlining fabrics.²

§ 1610.3 Requirements.

(a)(1) *Normal flammability, Class 1.* This class shall include textiles which meet the minimum requirements set forth in paragraph (a)(1)(i) or paragraph (a)(1)(ii) of this section. Textiles meeting these requirements are generally accepted by the trade as having no unusual burning characteristics.

(i) *Textile without nap, pile, tufting, flock, or other type of raised-fiber surface.* Such textiles in their original state and/or after being dry-cleaned and washed as described in §§ 1610.4(d) and 1610.4(e), when tested as described in § 1610.4 shall be classified as Class 1, normal flammability, when the time of flame spread is 4 seconds^d or more.

(ii) *Napped, pile, tufted, flocked, or other textiles having a raised-fiber surface.* Such textiles in their original state and/or after being dry-cleaned and washed as described in §§ 1610.4(d) and 1610.4(e), when tested as described in § 1610.4, shall be classified as Class 1, normal flammability, when the time of flame spread is more than 7 seconds, or when they burn with a rapid surface flash (from 0 to 7 seconds), provided the intensity of the flame is so low as not to ignite or fuse the base fabric.

^cRefer to sections 2(d) and 4 of the Flammable Fabrics Act of 1953, as amended in 1954, set out at 16 CFR part 1609 for exceptions to this exception.

²Interlining fabrics are not considered dangerously flammable when used as interlinings. When used for other purposes they should be tested and rated the same as any other fabrics.

^dOn August 23, 1954, the Flammable Fabrics Act was amended, changing the test for the time of flame spread for plain-surfaced fabrics, provided in paragraphs 3.1.1.1 (now § 1610.3(a)(1)(i)) and 3.1.3.1 (now § 1610.3(a)(3)(i)), by reducing the burning time from 4 to 3½ seconds. For the purpose of the administration of that act, therefore, the 3½ second burning time for plain-surface fabrics is applicable.

§ 1610.4

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(2) *Intermediate flammability, Class 2.* This class shall include textiles which meet the minimum requirements set forth in paragraph (a)(2)(i) of this section. Textiles meeting these requirements are recognized by the trade as having flammability characteristics between normal and rapid and intense burning.

(i) *Napped, pile, tufted, flocked, or other textiles having a raised-fiber surface.* Such textiles in their original state and/or after being dry-cleaned and washed as described in §§1610.4(d) and 1610.4(e), when tested as described in §1610.4, shall be classified as Class 2, intermediate flammability, when the time of flame spread is from 4 to 7 seconds, both inclusive, and the base fabric ignites or fuses.

(3) *Rapid and intense burning, Class 3.* This class shall include textiles which have burning characteristics as described in paragraphs (a)(3)(i) and (a)(3)(ii) of this section. Such textiles are considered dangerously flammable and recognized by the trade as being unsuitable for clothing because of their rapid and intense burning.

(i) *Textiles free from nap, pile, tufting, flock, or other type of raised-fiber surface.* Such textiles in their original state and/or after being dry-cleaned and washed as described in §§1610.4(d) and 1610.4(e), when tested as described in §1610.4, shall be classified as Class 3, rapid and intense burning, when the time of flame spread is less than 4 seconds.^e

(ii) *Napped, pile, tufted, flocked, or other textiles having a raised-fiber surface.* Such textiles in their original state and/or after being dry-cleaned and washed as described in §§1610.4(d) and 1610.4(e) when tested as described in §1610.4 shall be classified as Class 3, rapid and intense burning, when the time of flame spread is less than 4 seconds and when the intensity of flame is such as to ignite or fuse the base fabric.

§ 1610.4 Methods of test.

(a)(1) *Number and size of specimens required.* Five specimens, each measuring 2 by 6 inches, are required for each test.

^e See footnote d.

(2) For textiles without a raised-fiber surface the long dimension shall be that in which they burn most rapidly, and the more rapidly burning surface shall be tested. To establish the long dimension and the surface, preliminary tests are made as described in paragraph (g) of this section, with specimens cut in different directions.

(3) For textiles having a raised-fiber surface, the direction of the lay of the surface fibers shall be parallel with the long dimension of the specimens. For this type of textiles with varying depths of pile, tufting, etc., the specimens are taken from that part and tested on that surface which has the fastest rate of burning.

(4) If the specimens in the preliminary test, when tested as described in paragraph (g) of this section, do not ignite or are very slow burning, or should have a fire-retarding finish, a swatch large enough to provide the specimens required for the test, with allowance for shrinkage in dry cleaning and washing, is subjected to the dry cleaning and washing procedures described in paragraphs (d) and (e) of this section. The specimens for the flammability test are then taken from it.

(5) The specimens required for testing, each 2 by 6 inches, are marked out on the back (or under side) of each sample with the long dimension in the direction in which burning is most rapid, as established in the preliminary trials. The end of the specimen toward which and on the face of which burning is most rapid is identified by attaching a staple to it. The specimens are then cut out.

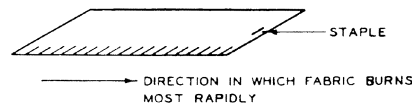


FIGURE 1—Specimen showing staple.

(b) *Flammability tester.* The flammability tester consists of a draft-proof ventilated chamber enclosing a standardized ignition medium, sample rack, and automatic timing device.

(1) *Draft-proof chamber with vented top (A, fig. 2).* This metal chamber prevents air circulation around the specimen