PART 1611—STANDARD FOR THE FLAMMABILITY OF VINYL PLASTIC FILM

Subpart A—The Standard

Subpart B—Rules and Regulations

SOURCE: 40 FR 59898, Dec. 30, 1975, unless otherwise noted.

CODIFICATION NOTE: Part 1611 is a codification of the previously unpublished flammability standard for vinyl plastic film which was derived from part of the requirements of Commercial Standard 192–53, issued by the Department of Commerce, effective on May 22, 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 Public Law 90–189. Paragraph 3.11 of the Commercial Standard, referred to in the 1954 act, has been codified as §1611.3 16 CFR part 1609 containes the text of the Flammable Fabrics Act of 1953, as amended in 1954.

Subpart A—The Standard

AUTHORITY: Sec. 4, 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.

§ 1611.1 Purpose and scope.

The purpose of this standard is to promulgate a minimum standard for flammability of vinyl plastic film which are subject to the requirements of the Flammable Fabrics Act.

§ 1611.2 General description of products covered.

The material covered is nonrigid, unsupported, vinyl plastic film, including transparent, translucent, and opaque material, whether plain, embossed, molded or otherwise surface treated.[a]

§ 1611.3 Flammability—general requirement.

The rate of burning shall not exceed 1.2 in./sec as judged by the average of five determinations lengthwise and five determinations transverse to the direction of processing, when the material is tested with the SPI flammability tester in accordance with the method described in §1611.4.

§ 1611.4 Flammability test.

(a) *Apparatus and materials.* The apparatus shall be constructed essentially as shown in figure 1 and shall consist of the following:

(1) *Specimen holder.* (i) A removable, flat, specimen-holding rack, the upper and lower sections of which are separate, shall have the shape and dimensions shown in figure 2 (sketch of sample-holding rack). The specimen is supported by tight closure of the upper and lower sections around the sides of the specimen. The center section of the rack contains an open U-shaped area in which burning of the specimen takes place. At the open end of the rack the forked sides are at an angle of 45° for the last inch. Thus, when the rack is slid into the cabinet on runners mounted at a 45° angle, the bent portion of the specimen adjacent to the igniter flame is vertical and the remainder is at 45°.

(ii) The switch actuators consist of suitable springs mounted on the side of

[a] Refer 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 this standard. The vinyl plastic film covered by Commercial Standard 192–53, as promulgated by the Secretary of Commerce was vinyl plastic film 10 mils and less in thickness (see §1.3 of the voluntary standard). After CS 191–53 and CS 192–53 were made mandatory by section 4 of the act, the Federal Trade Commission clarified the scope of the standards in rules and regulations now found at §§1611.31(i) and 1611.33(b) (formerly 16 CFR 302.1(a)(9) and 302.3(b)).

the rack, one just beyond the curved portion at the open end, and the other at the closed end of the U-shaped holder. The springs are depressed and held in position prior to ignition by means of cotton thread suitably wound across the specimen and securely attached to the rack. As flame reaches these threads, the springs are released, thus activating the microswitches of the stop clocks.

(2) *Igniter flame.* The igniter flame shall be produced at the tip of a No. 22 hypodermic needle jet. The igniter shall be so located in the cabinet that the tip of the needle is 9/16 in. from the surface of the specimen when the specimen rack is in place.

(3) *Cabinet.* The cabinet shall protect the igniter flame and specimen from air currents during tests, yet contain a suitable door or window for visual operation, provision for inserting the specimen holder, and adjustable vents to supply sufficient air for combustion of the specimen. It should also be capable of rapid ventilation following a test so that all combustion products can be removed between tests. A hood may be used if its exhaust fan is turned off during the test.

(4) *Timing mechanism.* The burning rate shall be determined by a stop clock through microswitches mounted on the specimenholder rack. The clock is started when the specimen flame burns the first thread, and is stopped when the thread at the upper end of the holder, 6 in. from the first thread, burns apart. The timing mechanism shall be capable of indicating time interval to 0.1 second.

(5) *Butane.* Unless otherwise specified, butane gas shall be used for the igniter flame.

(6) *Thread.* J. & P. Coats heavy-duty white cotton thread.

(7) *Microburner.*

(b) *Test specimens.* (1) Test specimens shall be 3 in. in width and 9 in. in length. They shall be free from folds or wrinkles. Five specimens from each direction (machine and transverse) of a given material shall be tested.

(2) *Conditioning.* The conditioning procedure shall conform to the requirements of procedure B of ASTM D618, Tentative Methods of Conditioning Plastics and Electrical Insulating Materials for Testing.

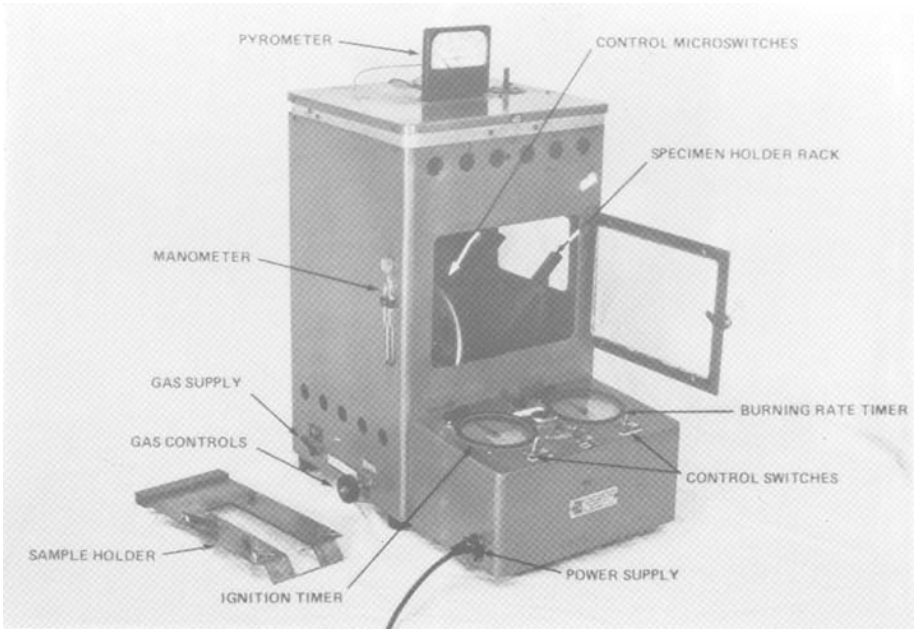
(c) *Procedure.* (1) After preparing the specimens, the holder shall be threaded so as to depress the switch actuators (springs) at least ¼ in. from the edge of the holder. Each actuator shall be separately threaded, the thread passing down through the J-slots and under the upper jaws so that the thread is adjacent to the specimen when the holder is closed.

(2) The specimen shall be inserted into the holder so that it extends down into the lock springs and is held firmly between the two wires at the open end of the burning channel. These wires insure that the end of the specimen is always the correct distance from the igniter flame. The sample shall be free from wrinkles or distortion when the holder is closed. The specimen should not extend beyond the outer edge of the lower plate, otherwise the rack may not slide freely on the slide channel on introducing it into the cabinet.

(3) Prior to introducing the specimen and holder into the cabinet, both electrical switches shall be set for automatic timing. The needle valve regulating the butane flow shall be adjusted to provide a ½-in. flame. (When the specimen is in place its surface is 9/16 in. from the tip of the needle and the flame is just barely flattened against the specimen. This can be checked by using a specimen made of asbestos in place of a plastic specimen.)

(4) With the hood fan off, clocks zeroed, and the flame adjusted as mentioned, the door is closed and the specimen holder is then inserted at a constant rate. The holder should be allowed to slide down the rails by gravity, taking about one-half second to travel the length of the slide. Any hesitation in bringing the specimen holder fully into burning position may cause erroneous ignition results.

(5) The burning time shall be read from the stop clock and the rate of burning calculated. Results that deviate from the mean value of all tests should be rejected if the deviation of the doubtful value is more than five times the average deviation from the mean obtained by excluding the doubtful value. Such doubtful values shall be discarded and retests made.



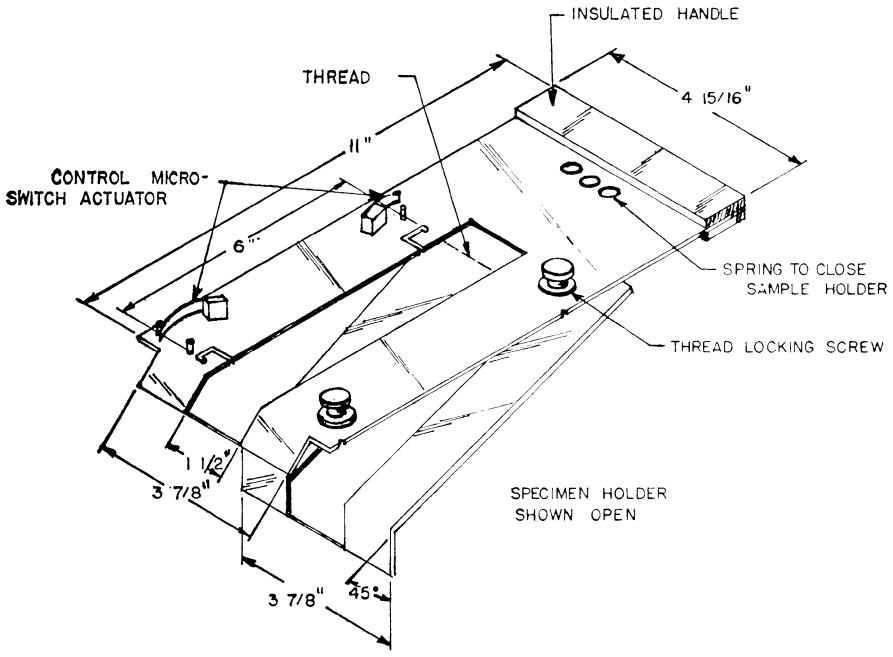


FIGURE 2 —Specimen holder

Subpart B—Rules and Regulations

AUTHORITY: Sec. 5, 15 U.S.C. 1194.

NOTE: An interpretation, with respect to Ornamental Veils or Veilings, issued by the Federal Trade Commission at 32 FR 11850, Aug. 17, 1967, provides as follows:

Ornamental millinery veils or veilings when used as a part of, in conjunction with, or as a hat, are not to be considered such a "covering for the neck, face, or shoulders" as would, under the first proviso of section 2(d) of the Flammable Fabrics Act, cause the hat to be included within the definition of the term "article of wearing apparel" where such ornamental millinery veils or veilings do not extend more than nine (9) inches from the tip of the crown of the hat to which they are attached and do not extend more than two (2) inches beyond the edge of the brim of the hat.

Where hats are composed entirely of ornamental millinery veils or veilings such hats will not be considered as subject to the Flammable Fabrics Act if the veils or veilings from which they are manufactured were not more than nine (9) inches in width and do not extend more than nine (9) inches from the tip of the crown of the completed hat.

§ 1611.31 Terms defined.

As used in this part, unless the context otherwise specifically requires:

(a) The term *act* means the "Flammable Fabrics Act" (approved June 30, 1953, Pub. Law 88, 83d Congress, 1st sess., 15 U.S.C. 1191; 67 Stat. 111), as amended, 68 Stat. 770, August 23, 1954.

(b) The terms *rule*, *rules*, *regulations*, and *rules and regulations*, mean the rules and regulations prescribed by the Commission pursuant to section 5(c) of the act.

(c) The term *United States* means the several States, the District of Columbia, the Commonwealth of Puerto Rico and the Territories and Possessions of the United States.

(d) The terms *marketing or handling* means the transactions referred to in section 3 of the Flammable Fabrics Act, as amended in 1967.

(e) The terms *uncovered or exposed part* of an article of wearing apparel as used in section 4(a) of the act, means that part of such article of apparel which might during normal wear be open to flame or other means of ignition.

NOTE: The outer surface of an undergarment is considered to be an uncovered or exposed part of an article of wearing apparel, and thus subject to the act.

(f) The term *textile fabric* means any coated or uncoated material subject to the act, except film and fabrics having a nitro-cellulose fiber, finish, or coating, which is woven, knitted, felted or otherwise produced from any natural or man-made fiber, or substitute therefore, or combination thereof, of two inches or more in width, and which is in a form or condition ready for use in wearing apparel.

(g) The term *plain surface textile fabric* means any textile fabric which does not have an intentionally raised fiber or yarn surface such as a pile, nap, or tuft, but shall include those fabrics having fancy woven, knitted or flock printed surfaces.

(h) The term *raised surface textile fabric* means any textile fabric which has an intentionally raised fiber or yarn surface such as a pile, nap, or tufting.

(i) The term *film* means any nonrigid, unsupported plastic, rubber or other synthetic or natural film or sheeting, subject to the act, or any combination thereof, including transparent, translucent, and opaque material, whether plain, embossed, molded, or otherwise surface treated, which is in a form or condition ready for use in wearing apparel, and shall include film or sheeting exceeding 10 mils in thickness.

(j) The term *test* means the application of the relevant test method prescribed in the procedures provided under section 4(a) of the act.

(k) The term *initial test* means tests made under the procedures prescribed in section 4(a) of the act of specimens taken from two separate pieces of a textile fabric, or textile fabric with a nitro-cellulose fiber, finish or coating, having the same weight, construction and finish type, or from two separate runs of film having the same formula, finish, color, and thickness.

(l) The term *finish type* means a particular finish, but does not include