

U.S. CONSUMER PRODUCT SAFETY COMMISSION



Office of Compliance

Requirements¹ for Clothing Textiles, 16 C.F.R. Part 1610

What is the purpose of the general wearing apparel flammability standards?

The purpose of this regulation is to keep dangerously flammable textiles and garments made of these textiles out of commerce. The standard provides methods of testing the flammability of clothing and textiles intended to be used for clothing by classifying fabrics into 3 classes of flammability based on their speed of burning. This minimum standard specifies that Class 3, textiles, the most dangerously flammable fabrics, are unsuitable for use in clothing because of their rapid and intense burning.

Where can I find the requirements for clothing flammability?

The regulations are published in the Code of Federal Regulations in Title 16, Part 1610.

What is considered wearing apparel?

Wearing apparel includes any costume or article of clothing that people wear. The standard applies to all textiles used in adult and children's wearing apparel. Most children's sleepwear must also meet more stringent flammability requirements. Most hats, gloves, footwear, and fabrics used between the linings and outer fabrics of garments are not required to meet this standard.

How do you test fabrics or garments to ensure that they comply with the flammability standard?

Because of the detail in the regulation, the following is a general overview of the testing requirements. For more detailed information about the test equipment and procedure, selecting specimens, and other requirements, please refer to the regulation or contact the Office of Compliance.

Five specimens measuring 2-inches by 6-inches are used for each test. The specimens are tested before and after dry cleaning and washing. The specimens are mounted in a specimen holder and placed in the test cabinet as specified in the regulations.

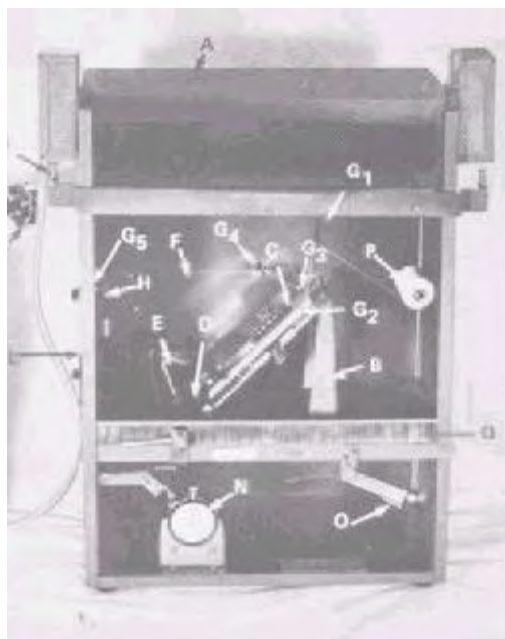
Textiles with raised fiber surfaces, such as chenille, fleece, and terry cloth are brushed prior to testing.

After specimens are conditioned (oven dried and desiccator cooled), each specimen is placed in the test



Brushing Device

cabinet at a 45° angle. The lower surface of the specimen (not the edge) is exposed to a gas flame for one second. The specimen is allowed to burn upward until the flame burns through the stop cord releasing the weight and stopping the timer or extinguishes.



Test Cabinet

To arrive at the time of flame spread, average the times at which the timer stopped for all five specimens. If that time is less than 3.5 seconds for plain surface fabrics or less than 4 seconds for fabrics with a raised fiber surface, or if the specimens do not burn at all, or if only one specimen has a burn time, test a second

¹ This document is a simple summary of the clothing textile requirements and does not replace the requirements published in 16 C.F.R. Parts 1610. The summary does not include all of the details included in those requirements. For those details, please refer to the regulation or contact the Office of Compliance.

sample of five specimens. When a second sample is tested, the time of flame spread is the average of the times for all 10 specimens tested.

The regulation establishes three classes of flammability based on the time of flame spread.

- (1) Class 1 textiles have a flame spread time of 3.5 seconds or more for plain surface fabrics, of more than 7 seconds for raised surface fabrics, or 0-7 seconds for raised surface fabrics with no ignition or melting of the base fabric (generally when the fuzzy surface fibers of raised fiber fabrics exhibit a "surface flash"). *Class 1 textiles exhibit normal flammability and are acceptable for use in clothing.*
- (2) Class 2 applies only to fabrics with raised fiber surfaces. Class 2 textiles have a flame spread time from 4 to 7 seconds inclusive, and a base fabric that ignites or melts. *These fabrics exhibit intermediate flammability, and may be used in clothing. However, you should use caution when you make garments from Class 2 fabrics because the characteristics of those fabrics can cause their flammability test results to vary.*
- (3) Class 3 textiles have a flame spread time of less than 3.5 seconds for smooth plain surface fabrics, and less than 4 seconds for raised surface fabrics with a base fabric that melts or burns from other than the igniting flame. *Class 3 textiles exhibit rapid and intense burning and are dangerously flammable. You cannot use Class 3 textiles in clothing.*

Fabrics likely to be classified as Class 2 or Class 3 textiles include sheer rayon or silk, rayon chenille, reverse fleece or sherpa of cotton or cotton blend, and certain cotton terry cloth.

Which fabrics consistently meet the requirements of this standard?

Years of flammability testing has shown that the following fabrics consistently pass as Class 1 textiles and are exempt from the reasonable and representative testing requirements for firms issuing a flammability guaranty on these fabrics:

- (1) plain surface fabrics, regardless of fiber content, weighing 2.6 ounces per square yard or more; and
- (2) all fabrics (both plain surface and raised-fiber surface) regardless of weight, made entirely from any of the following fibers or entirely from a combination of these fibers: acrylic, modacrylic, nylon, olefin, polyester, and wool.

How can garment manufacturers, importers, distributors, or retailers be sure that the fabrics or garments they sell are not dangerously flammable?

- (1) You can purchase fabrics or garments made from the exempt fabrics listed above.
- (2) You can conduct reasonable and representative testing yourself on fabric (before cutting and sewing it into garments) or on finished garments,
- (3) You can purchase fabrics or garments from a supplier who issues a guarantee that they comply with these flammability requirements. To issue a guarantee, a supplier must conduct reasonable and representative tests on each item that the guarantee covers, and must maintain records of the tests that support the guarantee (except for exempt fabrics listed above). Please refer to the regulation for more detailed information on guarantees and record keeping requirements. We recommend that anyone relying on a guarantee take steps to confirm that the supplier issuing the guarantee has in fact tested the guaranteed product, and also to confirm periodically that appropriate testing continues.

Are there any other requirements for wearing apparel?

Yes. The Federal Trade Commission (FTC) has labeling laws that apply to wearing apparel. Contact the FTC at <http://www.ftc.gov> for more information.

Where can I find additional information?

You can obtain the Standard for the Flammability of Clothing Textiles, 16 C.F.R. Part 1610, from the Commission's Web Site at: <http://www.cpsc.gov>. For more information on the requirements for clothing textiles contact the Consumer Product Safety Commission, Office of Compliance, Washington, D.C. 20207, telephone: (301) 504-7913, e-mail: sect15@cpsc.gov.