

U.S. CONSUMER PRODUCT SAFETY COMMISSION



Office of Compliance

Requirements¹ for Mattresses and Mattress Pads

16 C.F.R. Part 1632

What is the purpose of the mattress standard?

This standard reduces the risks of death, personal injury, and property damage associated with fires that result from the ignition of mattresses by cigarettes. The standard provides a test to determine the ignition resistance of a mattress or mattress pad when exposed to a lighted cigarette.

Where can I find the requirements for mattress and mattress pad flammability?

The requirements for the Flammability of Mattresses and Mattress Pads can be found at 16 C.F.R. Part 1632. You can obtain the mandatory flammability standards from the CPSC Web Site at: <http://www.cpsc.gov>.

What is a mattress or mattress pad?

- (1) A mattress is a ticking filled with a resilient material intended or promoted for sleeping upon. This definition excludes sleeping bags, pillows, mattress foundations, water and air beds with no padding material, upholstered furniture which does not contain a detachable mattress, and juvenile pads for carriages, strollers, baskets, infant carriers, dressing tables, crib bumpers, and play pens. This definition includes futons.
- (2) A mattress pad is a thin, flat, mat or cushion and/or ticking filled with resilient material for use on top of a mattress. This definition excludes convoluted foam pads that are not totally encased in ticking.

What are the requirements for a mattress or mattress pad to determine cigarette ignition resistance?

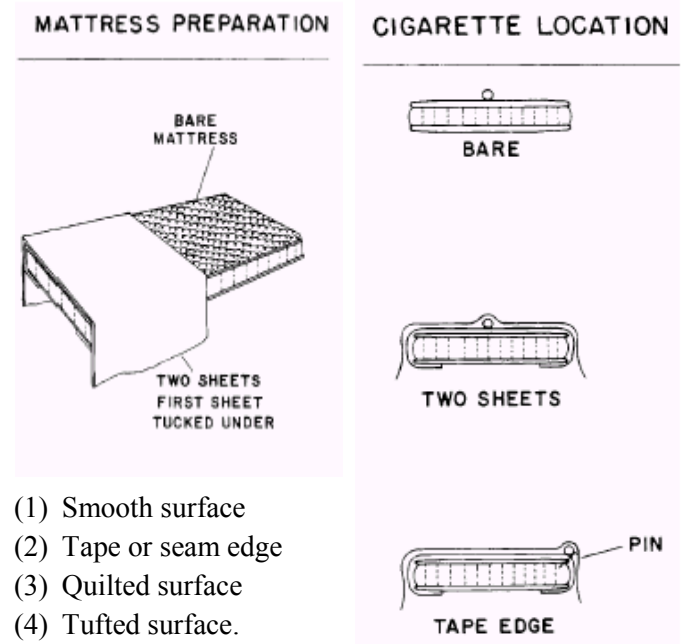
A pre-market prototype test is conducted for each new mattress or mattress pad design or when there has been a change in materials of a prototype design that could influence the cigarette ignition resistance. Mattress pads treated with a chemical flame retardant must be laundered prior to testing (16 C.F.R. 1632.5).

The standard also provides optional test methods for ticking and binding tape substitutions that can be used to reduce the number of additional prototype tests.

How do you test for cigarette ignition resistance?

A prototype test consists of testing six mattress or mattress pad surfaces (minimum of three mattresses). The apparatus and test materials required to conduct the test are specified in 16 C.F.R. 1632.4(a). The mattresses or mattress pads, sheets and cigarettes are conditioned for 48 hours prior to testing.

A minimum of 18 cigarettes will be burned on each of the six mattress surfaces. At least 9 on the bare mattress side and at least 9 on the two sheet side. The types of surface locations where cigarettes are placed for both the bare and two-sheet test are:



- (1) Smooth surface
- (2) Tape or seam edge
- (3) Quilted surface
- (4) Tufted surface.

A minimum of three cigarettes will be burned on each of the above locations. If only two surface locations exist, 4 cigarettes are burned on the smooth surface and 5 on the other surface. The cigarettes are positioned at least 6 inches apart. The cigarettes are positioned so that they burn into the seam, threads, or depression being tested.

¹ The following is a general unofficial summary of the requirements for the flammability of mattresses and mattress pads and does not replace the requirements published in 16 C.F.R. 1632. This 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.

The mattress or mattress pad prototype is accepted if each individual cigarette location on all six mattress or mattress pad surfaces meet the test criterion (minimum of 108 cigarettes).

What is the test criterion?

The test criterion specified in 16 C.F.R. 1632.3(b) states that individual cigarette test locations pass the test if the char length is not more than 2 inches (5.1cm) in any direction (including down into the filling) from the nearest point of the cigarette.

What is the ticking substitution procedure 16 C.F.R. 1632.6?

The optional ticking substitution procedure is used to establish acceptable equivalency if a mattress or mattress pad manufacturer wants to change the outer covering of the mattress or pad without conducting a new prototype test. The ticking classification (A, B, or C) of the ticking used on the prototype test must be known.

A ticking that can be changed can be a single thickness ticking, a quilted ticking or just the outside surface of a quilted ticking.

There are two parts to the ticking classification test. The ticking over foam test and the ticking over cotton batting test. Both tests are conducted using a plywood test box (12" x 12" x 6"h.) filled with cotton batting. An individual cigarette test location passes the test if the char length is not more than 1 inch in any direction from the nearest point of the cigarette and the batting does not ignite.

The first part, the ticking over foam test is repeated 3 times. Three lit cigarettes are placed 2 inches apart on each mounted ticking specimen and allowed to burn (total of 9 cigarettes). If any of the test locations fail, the ticking is Class C. If all cigarette locations pass, go on to the second part of the test.

The second part, the ticking over cotton batting test is also repeated 3 times as above with a total of 9 cigarettes. If any of the test locations fail, the ticking is Class B. If all cigarette locations pass, the ticking is Class A.

Class A tickings may be used on any qualified mattress prototype without conducting new prototype tests.

Class B tickings may be used on any mattress prototype which was qualified with a Class B or C ticking. Each class C ticking requires a new prototype test before it is used in production.

What is the tape edge substitution procedure 16 C.F.R. 1632.7?

The optional tape edge substitution procedure is used to establish that the substitution of tape edge materials,

different colors or sizes of edge materials, or other edge materials will not reduce ignition resistance of a mattress or mattress pad without the need for conducting a new prototype test.

In general, this test requires testing two mattress prototype surfaces (minimum one mattress or mattress pad) with the new edge material. A total of 36 cigarettes are tested at the tape edge location (18 per surface – 9 bare and 9 two-sheet). All cigarette locations must meet the test criterion of 16 C.F.R. 1632.3(b).

Are there any requirements for labeling?

Yes, each mattress or mattress pad is to be permanently labeled with the city and state location and the month and year of manufacture. Mattress pads treated with a chemical flame retardant must be labeled prominently with the letter "T" and with instructions on how to protect the pads from chemicals that will reduce the flame resistant properties.

Are there any requirements for keeping records?

Yes, records of all prototype tests are to be maintained by the manufacturer or importer. Please refer to the regulation for more detailed information. In general records will include:

- (1) Manufacturing specifications for each prototype;
- (2) Certified test results including prototype ID number, date of test, test room conditions, results of each cigarette tested, name and signature of tester, and ticking classification, if known;
- (3) Well identified photographs of each surface tested (with sheeting removed) clearly showing each cigarette burn location;
- (4) Records establishing that any substituted core or interior materials do not influence the ignition resistance of the prototype;
- (5) The test results and details of all ticking classifications (or a certification from a ticking supplier) including the classification (A, B, or C);
- (6) Certified test results, photographs, and details of all tape edge substitution tests.

Are there any other requirements for mattresses and mattress pads?

Many states have state tagging laws. Please contact your state tagging law official for further information.

Where can I find additional information?

For more information on the requirements, contact the Consumer Product Safety Commission, Office of Compliance, Washington, D.C. 20207, telephone: (301) 504-0608, <mailto:sect15@cpsc.gov>.