(1) Cut test specimens to an oversize 12″ × 12″ before the procedure is initiated.

(2) Vacuum specimens or shake vigorously to remove any loose fibers, dust or possible accumulated debris.

(3) Place individual specimen face down in a shallow pan which has been filled to a depth of 2″ with a wash solution of 1.1 grams of AATCC (American Association of Textile Chemists and Colorists) Standard Detergent as specified in AATCC Method 124–1996 (or equivalent) per liter of water preheated to 105 °F. Knead the back of the specimens with hand for 1 minute. Water level and temperature should be maintained for each specimen.

(4) Thoroughly rinse specimen face down with warm water at 105 °F. for 1 minute under a faucet with strong pressure.

(5) Remove excess liquor by use of a wringer, hydroextractor or gentle hand squeezing and dry in circulating air oven at 200 °F. until dry.

(6) Repeat the above procedure 10 times using fresh detergent and fresh water for each set of eight specimens.

(7) Subject the dry specimens to the test procedures in FF 2–70.

(e) This washing procedure and labeling provisions are subject to revocation should it be determined that such procedure is inadequate to fully protect the public.

[40 FR 59935, Dec. 30, 1975, as amended at 65 FR 12934, Mar. 10, 2000]

PART 1632—STANDARD FOR THE FLAMMABILITY OF MATTRESSES AND MATTRESS PADS (FF 4–72, AMENDED)

Subpart A—The Standard

§ 1632.1 Definitions.

In addition to the definitions given in section 2 of the Flammable Fabrics Act as amended (15 U.S.C. 1191), the following definitions apply for the purpose of the standard.

(a) Mattress means a ticking filled with a resilient material used alone or in combination with other products intended or promoted for sleeping upon.

(1) This definition includes, but is not limited to, adult mattresses, youth mattresses, crib mattresses including portable crib mattresses, bunk bed mattresses, futons, water beds and air mattresses which contain upholstery material between the ticking and the mattress core, and any detachable mattresses used in any item of upholstered furniture such as convertible sofa bed mattresses, corner group mattresses, day bed mattresses, roll-a-way bed mattresses, high risers, and trundle bed mattresses. See §1632.8 Glossary of terms, for definitions of these items.

(2) This definition excludes sleeping bags, pillows, mattress foundations, liquid and gaseous filled tickings such as water beds and air mattresses which do not contain upholstery material between the ticking and the mattress core, upholstered furniture which does not contain a detachable mattress such as chaise lounges, drop-arm love seats, press-back lounges, push-back sofas, sleep lounges, sofa beds (including jackknife sofa beds), sofa lounges (including glide-outs), studio couches and studio divans (including twin studio divans and studio beds), and juvenile product pads such as car bed pads, carriage pads, basket pads, infant carrier and lounge pads, dressing table pads, stroller pads, crib bumpers, and playpen pads. See §1632.8 Glossary of terms, for definitions of these items.

Subpart B—Rules and Regulations

16 CFR Ch. II (1–1–10 Edition)
Consumer Product Safety Commission § 1632.2

(b) **Mattress Pad** means a thin, flat mat or cushion, and/or ticking filled with resilient material for use on top of a mattress. This definition includes, but is not limited to, absorbent mattress pads, flat decubitus pads, and convoluted foam pads which are totally enclosed in ticking. This definition excludes convoluted foam pads which are not totally encased in ticking.

(c) **Ticking** means the outermost layer of fabric or related material that encloses the core and upholstery materials of a mattress or mattress pad. A mattress ticking may consist of several layers of fabric or related materials quilted together.

(d) **Core** means the main support system that may be present in a mattress, such as springs, foam, hair block, water bladder, air bladder, or resilient filling.

(e) **Upholstery material** means all material, either loose or attached, between the mattress or mattress pad ticking and the core of a mattress, if a core is present.

(f) **Tape edge (edge)** means the seam or border edge of a mattress or mattress pad.

(g) **Quilted** means stitched with thread or by fusion through the ticking and one or more layers of upholstery material.

(h) **Tufted** means buttoned or laced through the ticking and upholstery material and/or core, or having the ticking and upholstery material and/or core drawn together at intervals by any other method which produces a series of depressions on the surface.

(i) **Manufacturer** means an individual plant or factory at which mattresses and/or mattress pads are produced or assembled.

(j) **Mattress prototype** means mattresses of a particular design, sharing all materials and methods of assembly, but excluding differences in mattress size. If it has been shown as a result of prototype qualification testing that an upholstery material or core will not reduce the ignition resistance of the mattress prototype, substitution of another material for such material shall not be deemed a difference in materials for prototype definition. (See §1632.31(c)(4) for records required to demonstrate that a change of materials has not reduced ignition resistance of a mattress prototype.) If it is determined or suspected that a material has influenced the ignition resistance of the mattress prototype, a change in that material, excluding an increase in thickness, shall be deemed a difference in materials for purposes of prototype definition unless it is previously shown to the satisfaction of the Consumer Product Safety Commission that such change will not reduce the ignition resistance of the mattress prototype. Ticking materials may be substituted in accordance with §1632.6. Tape edge materials may be substituted in accordance with §1632.7.

(k) **Mattress pad prototype** means mattress pads of a particular design, sharing all materials and methods of assembly, but excluding differences in mattress pad size. A change in existing material, except an increase in thickness, shall be deemed a difference in materials for purposes of prototype definition unless it is previously shown to the satisfaction of the Consumer Product Safety Commission that such change will not reduce the ignition resistance of the mattress pad prototype. Ticking materials may be substituted in accordance with §1632.6. Tape edge materials may be substituted in accordance with §1632.7.

(l) **Surface** means one side of a mattress or mattress pad which is intended for sleeping upon and which can be tested.

§ 1632.2 Purpose, scope, and applicability.

(a) **Purpose.** (1) This standard prescribes requirements for testing of prototype designs of mattresses and mattress pads before the sale in commerce or the introduction in commerce of any mattress or mattress pad which is subject to the standard. The standard prescribes a test to determine the ignition resistance of a mattress or a mattress pad when exposed to a lighted cigarette.

(2) The standard sets forth a test at §1632.6 which may be used to classify ticking materials for resistance to cigarette ignition.

(3) The standard sets forth a test at §1632.7 which may be used to demonstrate that the substitution of tape
edge materials will not reduce the ignition resistance of a mattress prototype or a mattress pad prototype.

(b) **Scope.** (1) All mattresses, as defined in §1632.1(a), and all mattress pads, as defined in §1632.1(b), manufactured or imported after the effective date of this amendment are subject to the requirements of the standard as amended.

(2) All mattresses, as defined in §1632.1(a), and all mattress pads, as defined in §1632.1(b), manufactured or imported after June 22, 1973, and before the effective date of this amendment are subject to those requirements of the Standard for the Flammability of Mattresses (and Mattress Pads) (16 CFR part 1632) which were in effect before the effective date of this amendment.

(3) Manufacturers or importers desiring to use the ticking substitution procedure provided in §1632.6 may classify the ticking being used on each mattress prototype before or after the effective date of this amendment using the test procedure set forth in that section.

(4) One-of-a-kind mattresses and mattress pads may be excluded from testing under this standard in accordance with rules established by the Consumer Product Safety Commission. (See §1632.31(f): exemption for mattresses and mattress pads prescribed by a physician.)

(c) **Applicability.** (1) The requirements for prototype testing prescribed by this standard are applicable to each “manufacturer” (as that term is defined in §1632.1(i)) of mattresses or mattress pads subject to the standard which are manufactured for sale in commerce. The requirements of this standard for prototype testing are also applicable to all other persons or firms initially introducing mattresses or mattress pads into commerce, including importers; each such firm shall be deemed to be a “manufacturer” for purposes of this standard.

(2) The test at §1632.6 for classification of ticking materials may be used by manufacturers of mattresses or mattress pads and by manufacturers of ticking materials. The test at §1632.7 may be used by manufacturers of mattresses to demonstrate that substitution of tape edge materials will not reduce ignition resistance of a mattress prototype or a mattress pad prototype. Use of the tests in §§1632.6 and 1632.7 is optional.

§ 1632.3 General requirements.

(a) **Summary of test method.** The method measures the ignition resistance of a mattress or mattress pad by exposing the surface to lighted cigarettes in a draft-protected environment. The surfaces to be tested include smooth, tape edge, and quilted or tufted locations, if they exist on the mattress or mattress pad surface. A two-sheet test is also conducted on similar surface locations. In the latter test, the burning cigarettes are placed between the sheets.

(b) **Test criterion.** When testing the mattress or mattress pad surface in accordance with the testing procedure set forth in §1632.4, individual cigarette test locations pass the test if the char length is not more than 2 inches (5.1 cm) in any direction from the nearest point of the cigarette. In the interest of safety, the test operator should discontinue the test and record a failure before reaching the 2 inch char length if an obvious ignition has occurred.

(c) **Pre-market testing.** Each manufacturer required to perform prototype testing by the standard shall perform the testing required by the standard with acceptable results before selling in commerce or introducing in commerce any mattress or mattress pad which is subject to the standard.

(d) **Specimen selection and qualification.** (1) Each manufacturer required to perform prototype testing by the standard shall construct or select enough units of each proposed mattress prototype or proposed mattress pad prototype to provide six surfaces for testing. A minimum of three mattresses or mattress pads are required if only one side can be tested. Test each of the six surfaces according to §1632.4(d). If all the cigarette test locations on all six mattress surfaces yield passing results using the criterion specified in §1632.3(b), accept the mattress prototype. If all six surfaces of a mattress
pad yield passing results using the criterion in §1632.3(b), and all other applicable requirements prescribed by §1632.5 are met, accept the mattress pad prototype. If one or more of the cigarette test locations on any of the six surfaces fail to meet the test criterion of §1632.3(b), reject the mattress prototype or the mattress pad prototype.

(2) Prototype qualification testing may be repeated after action has been taken to improve the resistance of the mattress prototype or the mattress pad prototype to cigarette ignition by changes in design, construction methods, materials selection, or other means. When prototype qualification is repeated after rejection of a prototype, such qualification testing shall be conducted in the same manner as original qualification testing.

(3) Each mattress prototype and each mattress pad prototype must be accepted in prototype qualification before any mattress or mattress pad manufactured in accordance with such mattress prototype or mattress pad prototype is sold in commerce or introduced in commerce. Any manufacturer required to perform testing by the standard may rely on prototype tests performed before the effective date of this amended standard, provided that such tests were conducted in accordance with all requirements of §§1632.1(i), 1632.3(d), and 1632.4, and yield passing results when the test criterion of §1632.3(b) is applied. If the ticking classification test at §1632.6 is to be used when relying on prototype tests performed before the effective date of the standard, the ticking currently used on that mattress prototype must be classified before substitution of ticking using §1632.6.

(4) Rejected prototype mattresses or prototype mattress pads shall not be retested, offered for sale, sold, or promoted for use as a mattress (as defined in §1632.1(a)) or for use as a mattress pad (as defined in §1632.1(b)) except after reworking to improve the resistance to ignition by cigarettes, and subsequent retesting and acceptance of the mattress prototype (as defined in §1632.1(j)) or the mattress pad prototype (as defined in §1632.1(k)).

§1632.4 Mattress test procedure.

(a) Apparatus and Test Materials—(1) Testroom. The testroom shall be large enough to accommodate a full-scale mattress in a horizontal position and to allow for free movement of personnel and air around the test mattress. The test area shall be draft-protected and equipped with a suitable system for exhausting smoke and/or noxious gases produced by testing. The testroom atmospheric conditions shall be greater than 18 °C (65 °F) and at less than 55 percent relative humidity.

(i) The room shall be equipped with a support system (e.g. platform, bench) upon which a mattress may be placed flat in a horizontal position at a reasonable height for making observations.

(ii) If thin flexible mattresses or mattress pads are being tested the room shall also be equipped with a glass fiberboard test surface. The glass fiberboard shall be approximately 1 inch (2.5 cm) thick and have a thermal conductivity of 0.30±0.05 cal (g) / hr cm² °C/cm (0.24±0.04 Btu/hr ft² °F/in) at 23.9 °C (75 °F).¹

(2) Ignition source. The ignition source shall be cigarettes without filter tips made from natural tobacco, 85±2 mm long with a tobacco packing density of 0.270±0.02 g/cm³ and a total weight of 1.1±gm

(3) Fire extinguisher. A pressurized water fire extinguisher, or other suitable fire extinguishing equipment, shall be immediately available.

(4) Water bottle. A water bottle fitted with a spray nozzle shall be used to extinguish the ignited portions of the mattress.

(5) Scale. A linear scale graduated in millimeters, 0.1 inch, or 1⁄16 inch divisions shall be used to measure char length.

(6) Sheets or Sheeting Material. White, 100 percent cotton sheets or sheeting material shall be used. It shall not be treated with a chemical finish which

¹ Glass fiberboard that meets Federal Specification HH-I-568B is acceptable. Under this specification, the board must be Form A, Class 1, and plain faced. Copies of the specifications may be obtained from the Business Service Centers of the General Services Administration Regional Offices.
imparts a characteristic such as permanent press or flame resistance. It shall have 120–210 threads per square inch and fabric weight of 3.7±0.8 oz/yd² (125±28 gm/m²). The size of the sheet or sheeting material shall be appropriate for the mattress being tested.

(8 Other apparatus. In addition to the above, a thermometer, a relative humidity measuring instrument, a thin rod, straight pins, a knife or scissors, and tongs are required to carry out the testing.

(b) Test Preparation—(1) Mattress samples. The mattress shall be removed from any packaging prior to conditioning. The mattress surface shall be divided laterally into two sections (see fig. 1), one section for the bare mattress tests and the other for the two-sheet tests.

(2) Sheets or sheeting material. The sheets or sheeting material shall be laundered once before use in an automatic home washer using the hot water setting and longest normal cycle with the manufacturer’s recommended quantity of a commercial detergent, and dried in an automatic home tumble dryer.

(i) The sheet shall be cut across the width into two equal parts after washing.

(ii) Sheet material shall be cut in lengths to cover ½ of a mattress as described in § 1632.4(d)(3).

(3) Cigarettes. Unopened packages of cigarettes shall be selected for each series of tests. The cigarettes shall be removed from packaging prior to conditioning.

(c) Conditioning. The mattresses, laundered sheets or sheeting material, and loose cigarettes shall be conditioned in air at a temperature greater than 18 °C (65 °F) and a relative humidity less than 55 percent for at least 48 continuous hours prior to test. The mattresses, laundered sheets or sheeting material, and cigarettes shall be supported in a suitable manner to permit free movement of air around them during conditioning. The mattress meets this conditioning requirement if the mattress and/or all its component materials, except the metallic core, if present, have been exposed only to the above temperature and humidity conditions for at least 48 continuous hours prior to testing the mattress.

(d) Testing—(1) General. Mattress specimens shall be tested in a testroom with atmospheric conditions of a temperature greater than 18 °C (65 °F) and a relative humidity less than 55 percent. If the test is not performed in the conditioning room, at least one lit cigarette shall be placed on the mattress surface within 10 minutes of removal from the conditioning room. The other side of the mattress shall be tested immediately after completion of the first side.

(i) At least 18 cigarettes shall be burned on each mattress test surface, 9 in the bare mattress tests and 9 in the 2-sheet tests. If three or more mattress surface locations (smooth surface, tape edge, quilted, or tufted areas) exist in the particular mattress surface under test, three cigarettes shall be burned on each different surface location. If only two mattress surface locations exist in the particular mattress surface under test (tape edge and smooth surface), four cigarettes shall be burned on the smooth surface and five cigarettes shall be burned on the tape edge.

(ii) Light and place one cigarette at a time on the mattress surface. (If previous experience with a similar type of mattress has indicated that ignition is not likely, the number of cigarettes which may be lighted and placed on the mattress at one time is left to the test operator’s judgment. The number of cigarettes must be carefully considered because a smoldering or burning mattress is extremely hazardous and difficult to extinguish.) The cigarettes must be positioned no less than 6 inches apart on the mattress surface.

(iii) Each cigarette used as an ignition source shall be well lighted but not burned more than 4 mm (0.16 inch) when placed on the mattress. (Fire extinguishing equipment must be readily available at all times.) If a cigarette extinguishes before burning its full length on any mattress surface location, pops out of position when tested on a tuft, or rolls off a test location, the test must be repeated with a freshly lit cigarette on a different portion of the same type of location on the mattress surface until either: the number of cigarettes specified...
in §1632.4(d)(1)(i) have burned their full lengths; the number of cigarettes specified in §1632.4(d)(1)(i) have extinguished before burning their full lengths; or failure has occurred according to §1632.3(b) Test criterion.

(2) **Bare mattress tests**—(i) **Smooth surface.** Each burning cigarette shall be placed directly on a smooth surface location on the test surface on the half reserved for bare mattress tests. The cigarettes should burn their full lengths on a smooth surface without burning across a tuft, or stitching of a quilted area. However, if this is not possible because of mattress design, then the cigarettes shall be positioned on the mattress in a manner which will allow as much of the butt ends as possible to burn on smooth surfaces. Report results for each cigarette as pass or fail as defined in the test criterion (see §1632.3(b)). CAUTION: Even under the most carefully observed conditions, smoldering combustion can progress to the point where it cannot be readily extinguished. It is imperative that a test be discontinued as soon as ignition has definitely occurred. Immediately wet the exposed area with a water spray (from water bottle), cut around the burning material with a knife or scissors and pull the material out of the mattress with tongs. Make sure that all charred or burned material is removed. Ventilate the room.

(ii) **Tape edge.** Each burning cigarette shall be placed in the depression between the mattress top surface and the tape edge, parallel to the tape edge of the half of the test surface reserved for bare mattress tests. If there is only a seam or no depression at the edge, support the cigarettes in place along the edge and parallel to the edge with straight pins. Three straight pins may be inserted through the edge at a 45° angle such that one pin supports the cigarette at the burned end, one at the center, and one at the butt. The heads of the pins must be below the upper surface of the cigarette (see fig. 2). Report results for each cigarette as pass or fail as defined in the test criterion (see §1632.3(b)).
(iii) *Quilted location.* If quilting exists on the test surface, each burning cigarette shall be placed on quilted locations of the test surface. The cigarettes shall be positioned directly over the thread or in the depression created by the quilting process on the half of the test surface reserved for bare mattress tests. Report results for each cigarette as pass or fail as defined in the test criterion (see §1632.3(b)).

(iv) *Tufted location.* If tufting exists on the test surface, each burning cigarette shall be placed on tufted locations of the test surface. The cigarettes shall be positioned so that they burn down into the depression caused by the tufts and so that the butt ends of the cigarettes burn out over the buttons or laces used in the tufts or the depressions made by the tufts on the half of the test surface reserved for bare mattress tests. Report results for each cigarette as pass or fail as defined in the test criterion (see §1632.3(b)).

(3) **Two-sheet tests.** Spread a section of sheet or sheeting material smoothly over the mattress surface which has been reserved for the two-sheet test and tuck under the mattress. Care must be taken that hems or any other portion of the sheet which is more than one fabric thickness, is neither directly under nor directly over the test cigarette in the two-sheet test.

(i) *Smooth surfaces.* Each burning cigarette shall be placed directly on the sheet covered mattress in a smooth surface location as defined in the bare mattress test. Immediately cover the first sheet and the burning cigarette loosely with a second, or top sheet (see fig. 2). Do not raise or lift the top sheet during testing unless obvious ignition has occurred or until the cigarette has burned out. Whether a cigarette has extinguished may be determined by holding the hand near the surface of the top sheet over the test location. If no heat is felt or smoke observed, the cigarette has burned out. If ignition occurs, immediately remove the sheets and cigarette and follow the cautionary procedures outlined in the bare mattress test. Report results for each cigarette as pass or fail as defined in the test criterion (see §1632.3(b)).

(ii) *Tape edge.* (A) Each burning cigarette shall be placed in the depression between the top surface and the tape edge on top of the sheet, and immediately covered with a second sheet. It is important the air space be eliminated, as much as possible, between the mattress and the bottom sheet at the test location before testing. Depress the bottom sheet into the depression using a thin rod or other suitable instrument.
(B) In most cases, the cigarettes will remain in place throughout the test. However, if the cigarettes show a marked tendency to roll off the tape edge location, they may be supported with straight pins. Three straight pins may be inserted through the bottom sheet and tape at a 45° angle such that one pin supports the cigarette at the burning end, one at the center, and one at the butt. The heads of the pins must be below the upper surface of the cigarette (see fig. 2). Report results for each cigarette as pass or fail as defined in the test criterion (see §1632.3(b)).

(iii) Quilted locations. If quilting exists on the test surface, each burning cigarette shall be placed in a depression caused by quilting, directly over the thread and on the bottom sheet, and immediately covered with the top sheet. It is important that the air space be eliminated, as much as possible, between the mattress and the bottom sheet at the test location before testing. Depress the bottom sheet into the depression using a thin rod or other suitable instrument. If the quilt design is such that the cigarettes cannot burn their full lengths over the thread or depression, then the cigarettes shall be positioned in a manner which will allow as much of the butt ends as possible to burn on the thread or depression. Report results for each cigarette as pass or fail as defined in the test criterion (see §1632.3(b)).

(iv) Tufted locations. If tufting exists on the test surface, each burning cigarette shall be placed in the depression caused by tufting, directly over the tuft and on the bottom sheet, and immediately covered with the top sheet. It is important that the air space be eliminated, as much as possible, between the mattress and the bottom sheet at the test location before testing. Depress the bottom sheet into the depression using a thin rod or other suitable instrument. The cigarettes shall be positioned so that they burn down into the depression caused by the tuft and so that the butt ends of the cigarettes burn out over the buttons or laces, if used in the tufts. Report results for each cigarette as pass or fail as defined in the test criterion (see §1632.3(b)).
Home Laundering,” is found in Technical Manual of the American Association of Textile Chemists and Colorists, vol. 73, 1997, which is incorporated by reference. Copies of this document are available from the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, North Carolina 27709. This document is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(v) A different number of wash and dry cycles using another procedure may be specified and used, if that procedure has previously been found to be equivalent by the Consumer Product Safety Commission.

(3) Labeling—

(i) Treatment label. If a mattress pad contains a chemical fire retardant, it shall be labeled with the letter “T” pursuant to rules and regulations established by the Consumer Product Safety Commission.

(ii) Care label. All mattress pads which contain a chemical fire retardant treatment shall be labeled with precautionary instructions to protect the pads from agents or treatments which are known to cause deterioration of their flame resistance. Such labels shall be permanent and otherwise in accordance with rules and regulations established by the Consumer Product Safety Commission in §1632.31(b).

(iii) Exception. One time use products as defined in §1632.5(b)(1)(i) are not subject to these labeling requirements.

§1632.6 Ticking substitution procedure.

(a) This procedure may be used to verify acceptable equivalency if a mattress or mattress pad manufacturer wishes to change the ticking used on a particular mattress or mattress pad prototype without conducting a prototype test as specified in §1632.4 or §1632.5. The procedure includes a ticking classification test that may be used by a ticking, mattress or mattress pad manufacturer or by a distributor of ticking.

(b) Definitions. For the purpose of this section the following definitions apply in addition to those in §1632.1.

(1) Mattress ticking prototype. Means a ticking of a specific construction, color, or combination of colors or color pattern, weave pattern design, finish application, fiber content, and weight per unit area. With respect to film-coated ticking, a mattress ticking prototype means in addition to the factors listed above, a given method of application, chemical formula, and thickness of application of film coating. With respect to a quilted ticking, a mattress ticking prototype means the combination of a specific ticking as described above; a specific filling, thickness, density, and chemical composition; a specific thread; a specific method of quilting; and a specific backing fabric construction, weave, finish, fiber content, and weight.

(2) Mattress pad ticking prototype

(i) Means a ticking of a specific construction, color, or combination of colors or color pattern, weave pattern design, finish application, fiber content, and weight per unit area. With respect to film-coated ticking, a mattress pad ticking prototype means in addition to the factors listed above, a given method of application, chemical formula, and thickness of application of film coating.

(ii) Quilted ticking is excluded from this definition. Therefore, the following procedures may not be used to substitute quilted ticking used on or as a mattress pad.

(c) Scope and application.

(1) This procedure provides an independent evaluation of the cigarette ignition characteristics of ticking and for the classification of ticking into one of three performance classes. Class A represents tickings evaluated as having the potential, in some manner, to
act as a contributor to cigarette ignition.

(2) Substitution of any ticking which has been evaluated as Class A using the procedure in this §1632.6 for any other ticking material shall not be a “difference in materials” as that phrase is used in §§1632.1 (j) and (k). Consequently, any ticking material evaluated as Class A under this test procedure may be used on any qualified mattress prototype or on any qualified mattress pad prototype without conducting new prototype tests.

(3) Substitution of any ticking which has been evaluated as Class B using the procedure in this §1632.6 for the ticking material used on any mattress prototype or on any mattress pad prototype which was qualified in prototype testing with a testing material evaluated as Class B or a Class C shall not be a “difference in materials” as that phrase is used in §§1632.1 (j) and (k). Consequently, any ticking material evaluated as Class B under this test procedure may be used on any mattress or mattress pad which was qualified in prototype testing with a Class B or Class C ticking material without conducting new prototype tests.

(4) A ticking material which has been evaluated as Class C using the procedure in this §1632.6 may be used only on a mattress or mattress pad which was qualified in prototype testing with that particular Class C ticking material. Consequently, a ticking material evaluated as Class C under this test procedure may not be used on any mattress or mattress pad which was qualified in prototype testing using another Class C ticking material, or a Class A or Class B ticking material, without conducting new prototype tests.

(d) General requirements. (1) This procedure is a ticking prototype performance classification test. Ticking not classified according to this procedure may be used on mattresses or mattress pads if the mattress prototype or mattress pad prototype has been qualified utilizing the unclassified ticking in question.

(2) Test criterion. (i) Cigarette—An individual cigarette test location passes the test if the char length is not more than 1 inch (2.54 cm) in any direction from the nearest point of the cigarette, and the cotton felt is not ignited.

CAUTION: In the interest of safety, the test operator should discontinue the test and record a failure before reaching the 1 inch (2.54 cm) char length if, in his opinion, an obvious ignition has occurred.

(ii) Test Specimen—An individual test specimen passes the test if all three cigarette test locations meet the cigarette test criterion of this paragraph.

(3) Specimen selection. Three specimens shall be used for each ticking prototype classification test, with each specimen measuring no less than 20 inches by 20 inches (50.8 cm × 50.8 cm) square. The three specimens shall be selected from any fabric piece taken from a ticking prototype. The specimens shall be representative of the ticking prototype.

(4) Ticking classification. A ticking prototype is classified as Class A, Class B, or Class C, in accordance with the following schedules.

(i) Class A—A ticking prototype is classified as Class A when three specimens, tested in accordance with §1632.6(e), meet the test criterion in §1632.6(d)(2) when the ticking is tested directly over the cotton felt on the test box.

(ii) Class B—A ticking prototype is classified as Class B when three specimens, tested according to §1632.6(e), meet the test criterion in §1632.6(d)(2) when the ticking is tested on a 1/4 inch ±1/32 inch (6.3 mm ±.8 mm) thick urethane foam pad covering the cotton felt on the test box.

(iii) Class C—A ticking prototype is classified as Class C when any specimen tested according to §1632.6(e), fails to meet the test criterion in §1632.6(d)(2) when the ticking is tested on a 1/4 inch ±1/32 inch (6.3 mm ±.8 mm) thick urethane foam pad covering the cotton felt on the test box.

(e) Test procedure—(1) Apparatus. For the purpose of this section the following apparatus and materials are required in addition to that which is listed in §1632.4 (a) and (b).
(i) Sheet and sheeting material. Test covers made from sheets or sheeting material shall not be less than 12 inches by 12 inches (30.48 cm by 30.48 cm) square.

(ii) Template. Designed to allow for a one inch marking around the placement of the cigarette (see figure 3). Use of this template is optional.

(iii) Stapler or masking tape or other means of attachment to secure fabric to test box.

(iv) Mounting box. A 6 inch deep, 12 inch square plywood box. The box contains two \( \frac{1}{2} \) inch in diameter ventilation holes. (See figure 4.)

(v) Cotton felt. (A) The cotton felt shall be a thoroughly-garnetted mixture of all new material consisting of not less than 67% linters and of not more than 33% clean picker blend or equivalent binder and not more than 5% non-cellulosic total content. The felt shall not be bleached, moistened or chemically treated in any way.

(B) The felt may be re-used repeatedly after completion of each test by removing all of the smoldering, charred, heat-discolored fibers, or fibers exposed to water as a result of extinguishing the cotton ignited by previous test.

(vi) Urethane foam. The urethane foam shall have a density of 1.2 to 1.5 pounds per cubic foot, an indention load deflection of 22 to 35 pounds, with each test specimen measuring no less than 12 inches by 12 inches (30.48 cm by 30.48 cm) square, having a thickness of \( \frac{1}{4} \) inch \( \pm \frac{1}{32} \) inch (6.3 mm \( \pm .8 \) mm). The foam shall not be treated with a flame retardant chemical.

2. Conditioning. The test specimens, cigarettes, laundered sheets or sheeting material, foam and felt shall be conditioned as described in §1632.4(c).

3. Specimen preparation. (i) Place 907.2±4 grams (two pounds) of cotton felt in the test box, allowing the felt to protrude above the opening of the box to a height of up to 3 inches (7.62 cm) at the crown.

(ii) For the first part of this test, place a 12 inches by 12 inches (30.48 cm by 30.48 cm) square urethane foam pad on top of the cotton felt. Stretch the ticking specimen over the foam pad and fasten it to the sides of the test box using a stapler or tape. Be careful to avoid wrinkles in the fabric and have sufficient tautness to assure firm contact between the fabric and the filling materials in the test box.

4. Testing. (i) Ticking specimens shall be tested in a testroom with atmospheric conditions of a temperature greater than 18°C (65°F) and a relative humidity less than 55%.

(ii) Three cigarettes shall be burned on each ticking specimen, with no more than one cigarette burning at any time. At least one cigarette shall be placed on the most prominent part of the color and weave pattern design in the ticking. If the ticking is quilted, one cigarette shall be placed over the thread or in the depression created by the quilting process. Each cigarette must be positioned no less than two inches (5.08 cm) from any other cigarette or the edge of the box.

(iii) Light and place one cigarette on the test specimen. Immediately cover the burning cigarette with a sheet test cover. The cigarette shall be well lighted but not burned more than 4 mm (0.16 inch) when placed on the test specimen. The cigarette may be supported by three straight pins such that one pin supports the cigarette at the burning end, one at the center and one at the butt. The heads of the pins must be below the upper surface of the cigarette. Upon completion of the three cigarette burns and removal of the fabric and foam specimens, remove all of the char or heat discoloration on the cotton felt as stated in §1632.6(e)(v)(B). Fresh new felt shall be added to replace the discarded fibers in the amount necessary to maintain the full 907.2±4 grams (two pounds) of felt for each test.

(iv) If the cigarette extinguishes before burning its full length, the test must be repeated with a freshly lit cigarette on a different portion of the ticking specimen until either three cigarettes have burned their full lengths or three cigarettes have extinguished. Report result for each cigarette as pass or fail as defined in Test Criterion §1632.6(d)(2). An obvious ignition is recorded as a failure.

(v) If ignition occurs with any of the three cigarette burns on the ticking specimen, terminate testing of that
specimen and classify according to §1632.6(d)(4).

   (vi) If all cigarette test locations meet the Test Criterion in §1632.6(d)(2), repeat procedure outlined in §1632.6(e)(4)(iii) for the second part of the test with new ticking specimens that will be retested directly over the cotton felt, without the urethane foam pad. Remove the urethane foam pad and charred or heat discolored area from the cotton felt as specified in §1632.6(e)(v)(B) prior to testing. Record the test results as pass or fail as defined in Test Criterion §1632.6(d)(2) and classify according to §1632.6(d)(4).

   (5) Records. Records of any ticking classification test results relied upon by the mattress or mattress pad manufacturer or importer shall be maintained in accordance with rules and regulations established by the Consumer Product Safety Commission in §1632.31(c). As provided by §1632.31(c)(6), manufacturers or importers of mattresses or mattress pads may rely on a certification of compliance with this section of the standard provided by the ticking manufacturer or distributor; however, if a mattress or mattress pad fails to comply with the standard, the mattress or mattress pad manufacturer or importer must assume full responsibility under the standard. The Commission has no authority under this standard to compel ticking manufacturers or distributors to comply with this section or to establish, maintain and provide upon request, the records specified in §1632.31(c).
1 INCH (2.54 cm) TEMPLATE

TOLERANCES +1/32" - 0"
1/2" DIA. HOLE (2 PLACES)
(1.27 cm)

6" (15.24 cm)

3"

TEST BOX

MATERIAL 1/2" PLYWOOD

TOLERANCES ± 1/32" - 0"
§ 1632.7 Tape edge substitution procedure.

(a) Sections 1632.1 (j) and (k) provide in part that “a change in existing material shall be deemed a difference in materials for purposes of prototype definition unless it is shown to the satisfaction of the Consumer Product Safety Commission that such change will not reduce the ignition resistance” of the mattress prototype or the mattress pad prototype.

(b) The Commission will regard a showing “to the satisfaction of the Consumer Product Safety Commission” to have been made with respect to materials substitution of items such as flange materials and tapes at the tape edge under the following circumstances:

(1) The mattress or mattress pad prototype has been qualified previously under the provisions of §1632.3; and

(2) A substitution of materials involving only tape edge construction is contemplated; and

(3) A prototype mattress or mattress pad incorporating the substitute materials has been tested in accordance with applicable procedures in §1632.4 by placing 36 cigarettes (18 per surface—9 bare and 9 two-sheet) at tape edge locations with no test failure as determined by applying the test criterion of §1632.3(b); and

(4) Records are maintained setting forth the details of the materials substitution and showing the results of the testing referred to in paragraph (b)(3) of this section. The records are to be maintained in accordance with regulations established by the Consumer Product Safety Commission (see §1632.31).

§ 1632.8 Glossary of terms.

(a) Absorbent pads. Pad used on top of mattress. Designed to absorb urine thereby reducing skin irritation, can be one time use.

(b) Basket pad. Cushion for use in an infant basket.

(c) Bunk beds. A tier of beds, usually two or three, in a high frame complete with mattresses (see fig. 5).

(d) Car bed. Portable bed used to carry a baby in an automobile.

(e) Carriage pad. Cushion to go into a baby carriage.

(f) Chaise lounge. An upholstered couch chair or a couch with a chair back. It has a permanent back rest, no arms, and sleeps one (see fig. 5).

(g) Convertible sofa. An upholstered sofa that converts into an adult sized bed. Mattress unfolds out and up from under the seat cushioning (see fig. 5).

(h) Convoluted foam pad. A bed pad made of foam in an egg-crate configuration not encased in ticking.

(i) Corner groups. Two twin size bedding sets on frames, usually slipcovered, and abutted to a corner table. They also usually have loose bolsters slipcovered (see fig. 5).

(j) Crib bumper. Padded cushion which goes around three or four sides inside a crib to protect the baby. Can also be used in a playpen.

(k) Daybed. Daybed has foundation, usually supported by coil or flat springs, mounted between arms on which mattress is placed. It has permanent arms, no backrest, and sleeps one (see fig. 5).

(l) Decubitus pad. Designed to prevent or assist in the healing of decubitus ulcers (bed sores). Flat decubitus pads are covered by the standard. Convoluted decubitus pads made entirely from foam are not covered by the standard.

(m) Dressing table pad. Pad to cushion a baby on top of a dressing table.

(n) Drop-arm loveseat. When side arms are in vertical position, this piece is a loveseat. The adjustable arms can be lowered to one of four positions for a chaise lounge effect or a single sleeper. The vertical back support always remains upright and stationary (see fig. 5).

(o) Futon. A flexible mattress generally used on the floor that can be folded or rolled up for storage. It usually consists of resilient material covered by ticking.

(p) High riser. This is a frame of sofa seating height with two equal size mattresses without a backrest. The frame slides out with the lower bed and rises to form a double or two single beds (see fig. 5).

(q) Infant carrier and lounge pad. Pad to cushion a baby in an infant carrier.

(r) Mattress foundation. Consists of any surface such as foam, box springs or other, upon which a mattress is
(s) Pillow. Cloth bag filled with resilient material such as feathers, down, sponge rubber, urethane, or fiber used as the support for the head of a person.

(t) Playpen pad. Cushion used on the bottom of a playpen.

(u) Portable crib. Smaller size than a conventional crib. Can usually be converted into a playpen.

(v) Press-back lounges. Longer and wider than conventional sofa beds. When the lounge seat is pressed lightly, it levels off to form, with the seat, a flat sleeping surface. The seat slopes, in the sitting position, for added comfort (see fig. 5).

(w) Push-back sofa. When pressure is exerted on the back of the sofa, it becomes a bed. When the back is lifted, it becomes a sofa again. Styled in tight or loose cushions (see fig. 5).

(x) Roll-away-bed. Portable bed which has frame which folds in half with the mattress for compact storage.

(y) Sleep lounge. Upholstered seating section is mounted on a sturdy frame. May have bolster pillows along the wall as backrests or may have attached headrests (see fig. 5).

(z) Stroller pad. Cushion used in a baby stroller.

(aa) Sofa bed. These are pieces in which the back of the sofa swings down flat with the seat to form the sleeping surface. All upholstered. Some sofa beds have bedding boxes for storage of bedding. There are two types: the one-piece, where the back and seat are upholstered as a unit, supplying an unbroken sleeping surface; and the two-piece, where back and seat are upholstered separately (see fig. 5).

(bb) Sofa lounge—(includes glideouts). Upholstered seating section is mounted on springs and in a special frame that permit it to be pulled out for sleeping. Has upholstered backrest bedding box that is hinged. Glideouts are single sleepers with sloping seats and backrests. Seat pulls out from beneath back and evens up to supply level sleeping surface (see fig. 5).

(cc) Studio couch. Consists of upholstered seating section on upholstered foundation. Many types convert to twin beds (see fig. 5).

(dd) Studio divan. Twin size upholstered seating section with foundation is mounted on metal bed frame. Has no arms or backrest, and sleeps one (see fig. 5).

(ef) Twin studio divan. Frames which glide out (but not up) and use seat cushions, in addition to upholstered foundation to sleep two. Has neither arms nor back rest (see fig. 5).
Effective date: The amended standard shall become effective on April 10, 1985. As required by section 4(b) of the Flammable Fabrics Act (15 U.S.C. 1193(b)), mattresses and mattress pads which are in inventory or with the trade on the effective date of the amended standard are exempt from its requirements, but must comply with all applicable requirements of the original standard.

Subpart B—Rules and Regulations
§ 1632.31 Mattresses/mattress pads—labeling, recordkeeping, guaranties and “one of a kind” exemption.
(a) Definitions. For the purposes of this section, the following definitions apply:
(1) Standard for the Flammability of Mattresses or Standard means the Standard for the Flammability of Mattresses and Mattress Pads (FF 4–72, amended), 16 CFR part 1632, subpart A).
(2) The definition of terms set forth in the §1632.1 of the Standard shall also apply to this section.

(b) Labeling. (1) All mattress pads which contain a chemical fire retardant shall be labeled with precautionary instructions to protect the pads from agents or treatments which are known to cause deterioration of their flame resistance. Such labels shall be permanent, prominent, conspicuous, and legible.

(2) If a mattress pad contains a chemical fire retardant, it shall be prominently, conspicuously, and legibly labeled with the letter “T”.

(3) Each mattress or mattress pad subject to the Standard shall bear a permanent, accessible, and legible label containing the month and year of manufacture and the location of the manufacturer. (See §1632.1(i) of the Amended Standard.)

(4) The information required on labels by this section shall be set forth separately from any other information appearing on such label. Other information, representations, or disclosures, appearing on labels required by this section or elsewhere on the item, shall not interfere with, minimize, detract from, or conflict with the required information.

(5) No person, other than the ultimate consumer, shall remove or mutilate, or cause or participate in the removal or mutilation of, any label required by this section to be affixed to any item.

(6) Products intended for one time use (see §1632.5(b)(1)(i)) are not subject to the requirements of paragraphs (1) and (2) of this §1632.31(b).

(c) Records—manufacturers, importers, or persons initially introducing items into commerce. Every manufacturer, importer, or other person initially introducing into commerce mattresses or mattress pads subject to the standard, irrespective of whether guarantees are issued relative thereto, shall maintain the records hereinafter specified.

(1) Manufacturing specifications and description of each mattress or mattress pad prototype with an assigned prototype identification number.

(2) Test results and details of each prototype test performed in accordance with §1632.4 or §1632.5, including prototype identification number, ticking classification if known, test room condition, cigarette locations, number of relights for each location, whether each cigarette location passed or failed, name and signature of person conducting the test and date of test. These records shall include a certification by the person overseeing the testing as to the test results and that the test was carried out in accordance with the Standard.

(3) Photograph (color or black and white) of the bare surface of each mattress or mattress pad tested, in accordance with §1632.4 or §1632.5, with the prototype identification number of the mattress or mattress pad and a clear designation as to which part of the mattress or mattress pad was sheeted and which part was tested bare.

(4) Records to support any determination that a particular material, other than the ticking or tape edge material used in a mattress or mattress pad prototype, did not influence the ignition resistance of the prototype and could be substituted by another material. Such record should include photographs or physical specimens.

(5) Manufacturing specifications and description of any new ticking or tape edge material substituted in accordance with §1632.6 or §1632.7, with the identification number of the prototype involved.

(6) The test results and details of any ticking classification test conducted in accordance with §1632.6, including the ticking classification (A, B, or C), the test room condition, the number of relights, whether each cigarette passed or failed, the name and signature of the person conducting the test and the date of the test, or a certification from the ticking supplier. The certification should state the ticking classification and that the ticking was tested in accordance with §1632.6.

(7) The test results and details of any test of tape edge materials conducted in accordance with §1632.7, including prototype identification number, test room condition, number of relights, whether each cigarette passed or failed, name and signature of person conducting the test and date of test. The record shall include a certification by the person overseeing the testing as to
the test results and that the test was carried out in accordance with §1632.7.

(8) Photograph (color or black and white) of the bare surface of each mattress or mattress pad tested in accordance with §1632.7, with the prototype identification number of the mattress or mattress pad and a clear designation as to which part of the mattress or mattress pad was sheeted and which part was tested bare.

(9) Details of any approved alternate laundering procedure used in laundering mattress pads required by the Standard to be laundered during testing.

(10) Identification, composition, and details of the application of any flame retardant treatments employed relative to mattress pads or mattress pad components.

(11) Disposition of all failing or rejected prototype mattress or mattress pads. Such records must demonstrate that the items were retested and reworked in accordance with the Standard prior to sale or distribution and that such retested or reworked mattresses or mattress pads comply with the Standard, or must otherwise show the disposition of such items.

(12) The records required by this paragraph shall be maintained for as long as the prototype is in production, the ticking is being used on the mattresses or mattress pad prototype, and/or the tape edge material is being used on the mattress or mattress pad prototype, and shall be retained for 3 years thereafter.

(d) Tests for guaranty purposes. Reasonable and representative tests for the purpose of issuing a guaranty under section 8 of the Act for mattress or mattress pads subject to the Standard shall be those prototype and substitution tests performed, pursuant to the requirements of the Standard.

(e) Compliance with this section. No person subject to the Flammable Fabrics Act shall manufacture for sale, import, distribute, or otherwise market or handle any mattress or mattress pad which is not in compliance with §1632.31.

(f) “One of a kind” exemption for physician prescribed mattresses and mattress pads. (1) A mattress or mattress pad manufactured in accordance with a physician’s written prescription or manufactured in accordance with other comparable written medical therapeutic specification, to be used in connection with the treatment or management of a named individual’s physical illness or injury, shall be considered a “one of a kind mattress” and shall be exempt from testing under the Standard pursuant to §1632.2(b)(4) thereof. Provided, that the mattress bears a permanent, conspicuous and legible label which states:

WARNING: This mattress or mattress pad may be subject to ignition and hazardous smoldering from cigarettes. It was manufactured in accordance with a physician’s prescription and has not been tested under the Federal Standard for the Flammability of Mattresses (FF 4-72).

Such labeling must be attached to the mattress or mattress pad so as to remain on or affixed thereto for the useful life of the mattress or mattress pad. The label must be at least 40 square inches (250 sq. cm) with no linear dimension less than 5 inches (12.5 cm). The letters in the word “WARNING” shall be no less than 0.5 inch (1.27 cm) in height and all letters on the label shall be in a color which contrasts with the background of the label. The warning statement which appears on the label must also be conspicuously displayed on the invoice or other sales papers that accompany the mattress in commerce from the manufacturer to the final point of sale to a consumer.

(2) The manufacturer of a mattress or mattress pad exempted from testing under this paragraph shall, in lieu of the records required to be kept by paragraph (c) of this section, retain a copy of the written prescription or other comparable written medical therapeutic specification for such mattress or mattress pad during a period of three years, measured from the date of manufacture.

(3) For purposes of this regulation the term physician shall mean a physician, chiropractor or osteopath licensed or otherwise permitted to practice by any State of the United States.
§ 1632.63 Policy clarification on renovation of mattress.

(a) Section 3 of the Flammable Fabrics Act (15 U.S.C. 1192) prohibits, among other things, the “manufacture for sale” of any product which fails to conform to an applicable standard issued under the act. The standard for the Flammability of Mattresses, as amended (FF 4–72) (subpart A of this part), issued pursuant to the act, provides that, with certain exceptions, mattress must be tested according to a prescribed method. The standard does not exempt renovation; nor does it specifically refer to renovation.

(b) The purpose of this document is to inform the public that mattresses renovated for sale are considered by the Commission to be mattresses manufactured for sale and, therefore, subject to the requirements of the Mattress Standard. The Commission believes that this policy clarification will better protect the public against the unreasonable risk of fires leading to death, personal injury or significant property damage, and assure that purchasers of renovated mattresses receive the same protection under the Flammable Fabrics Act as purchasers of new mattresses.

(c) For purposes of this document, mattress renovation includes a wide range of operations. Replacing the ticking or batting, stripping a mattress to its springs, rebuilding a mattress, or replacing components with new or recycled materials, are all part of the process of renovation. Any one, or any combination of one or more, of these steps in mattress renovation is considered to be mattress manufacture.

(d) If the person who renovates the mattress intends to retain the renovated mattress for his or her own use, or if a customer or a renovator merely hires the services of the renovator and intends to take back the renovated mattress for his or her own use, “manufacture for sale” has not occurred and such a renovated mattress is not subject to the mattress standard.

(e) However, if a renovated mattress is sold or intended for sale, either by the renovator or the owner of the mattress who hires the services of the renovator, such a transaction is considered to be “manufacture for sale”.

(f) Accordingly, mattress renovation is considered by the Commission to be “manufacture for sale” and, therefore, subject to the Mattress Standard, when renovated mattresses are sold or intended for sale by a renovator or the customer of the renovator.

(g) A renovator who believes that certain mattresses are entitled to one-of-a-kind exemption, may present relevant facts to the Commission and petition for an exemption. Renovators are expected to comply with all the testing requirements of the Mattress Standard until an exemption is approved.