

Appendix B: Calibration of Propane Flowmeters

Once the assembly of the burner is completed and all the connecting points are checked for gas leakage, the most critical task is ensuring the exact flow rates of propane into the top and side burners, as described in the test protocol. The gas flow rates are specified at $12.9 \text{ LPM} \pm 0.1 \text{ LPM}$ and $6.6 \text{ LPM} \pm 0.05 \text{ LPM}$ for the top and side burners (Burners 1 and 2), respectively, at a pressure of $101 \pm 5 \text{ kPa}$ (standard atmospheric pressure) and a temperature of $22 \pm 3 \text{ }^\circ\text{C}$ ($72 \pm 5 \text{ }^\circ\text{F}$). The rotameters that are installed in the control box of the burner assembly need to be calibrated for accurate measurement of these flow rates.

The most practical and accurate method of measuring and calibrating the flow rate of gases (including propane) is use of a diaphragm test meter (also called a dry test meter). A diaphragm test meter functions based on positive displacement of a fixed volume of gas per rotation and its reading is therefore independent of the type of the gas being used. The gas pressure and temperature, however, can have significant impact on the measurement of flow rate.

The gas pressure downstream of the rotameters that are installed in the control box of the burner assembly is maintained near atmospheric pressure (only a few millimeters of water above atmosphere). Therefore, the best location to place the diaphragm test meter for gas flow calibration is right downstream of the control box. The pressure at the propane tank must be set between 10 and $20 \pm 0.5 \text{ psig}$. With this setting, the rotameter (Matheson 604) for the side burner will read in the neighborhood of 120 (center of black ball) for the desired propane flow rate. The rotameter (Matheson 605) for the top burner will read in the neighborhood of 90 (center of black ball).

Calibration Procedure:

Install the diaphragm test meter (DTM) downstream of the control box in the line for the top burner. Check all connecting points for gas leakage. Open the main valve on the propane tank and set a pressure between 10 to $20 \pm 0.5 \text{ psig}$. Set the timers in the control box for 999 seconds (or the maximum range possible). Record the barometric pressure. Turn the "Burner 1" switch to ON and ignite the top burner. Set the "Burner 1" rotameter to read approximately 70 (center of the black ball). Allow the gas to flow for 2-3 minutes until the DTM is stabilized. Record the pressure and temperature in the DTM. Use a stopwatch to record at least one minute worth of complete rotations while counting the number of rotations¹⁴. Calculate the propane gas flow rate using the recorded time and number of rotations (total flow in that time); use the pressure and temperature readings to convert to standard conditions. Repeat this measurement for a meter setting of about 90 and again for a setting of about 110 on the flowmeter. Plot the flow versus meter reading, fit a best line (possibly quadratic) through these points to find the meter setting for a flow of 12.9 LPM at the above "standard" conditions. Repeat this procedure for "Burner 2" using meter readings of approximately 100, 120 and 140 to find the setting that gives a flow rate of 6.6 LPM at the standard conditions. After completion of the calibration, re-set the timers to 70 and 50 seconds.

Note: Use the same propane tank pressure during test runs that was used for gas burner calibration.

¹⁴ With a diaphragm test meter well-sized to this application, this should be more than five rotations. A one liter per rotation meter will require 10 to 15 rotations for the flow measurements and greater than the minimum of one minute recording time specified here.

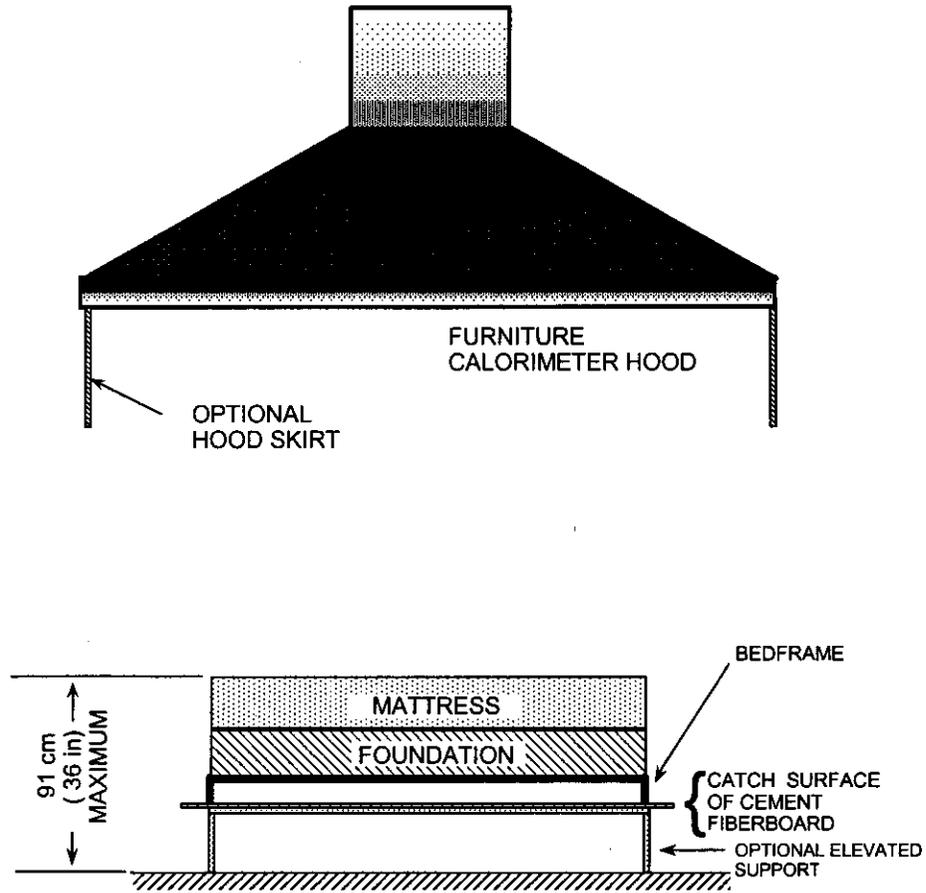


FIGURE 1. TEST ASSEMBLY, SHOWN IN FURNITURE CALORIMETER. (CONFIGURATION A.)

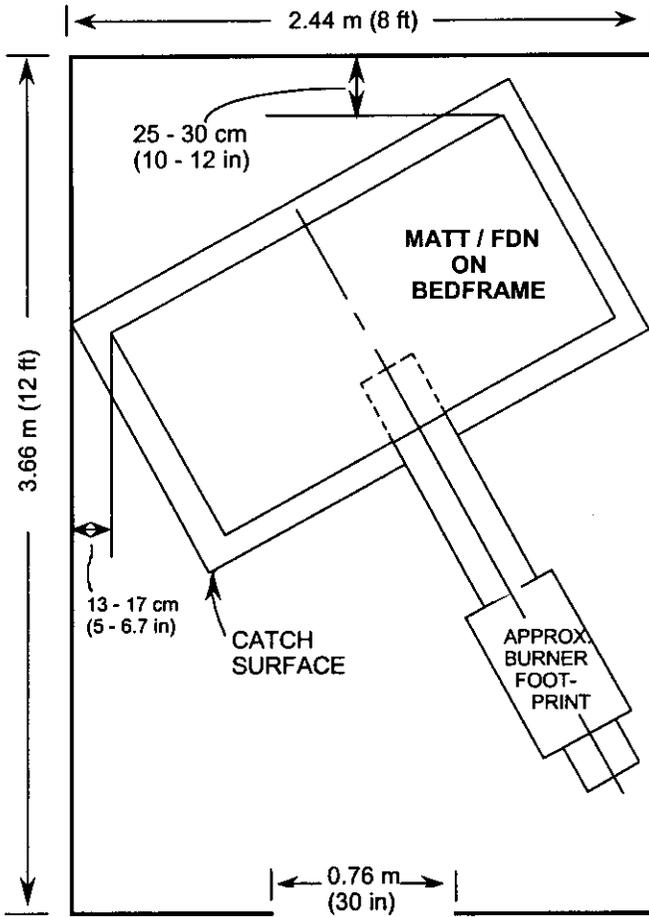


FIGURE 2 . TEST ARRANGEMENT IN 2.44 m x 3.66 m (8 ft x 12 ft) ROOM; CONFIGURATION B.

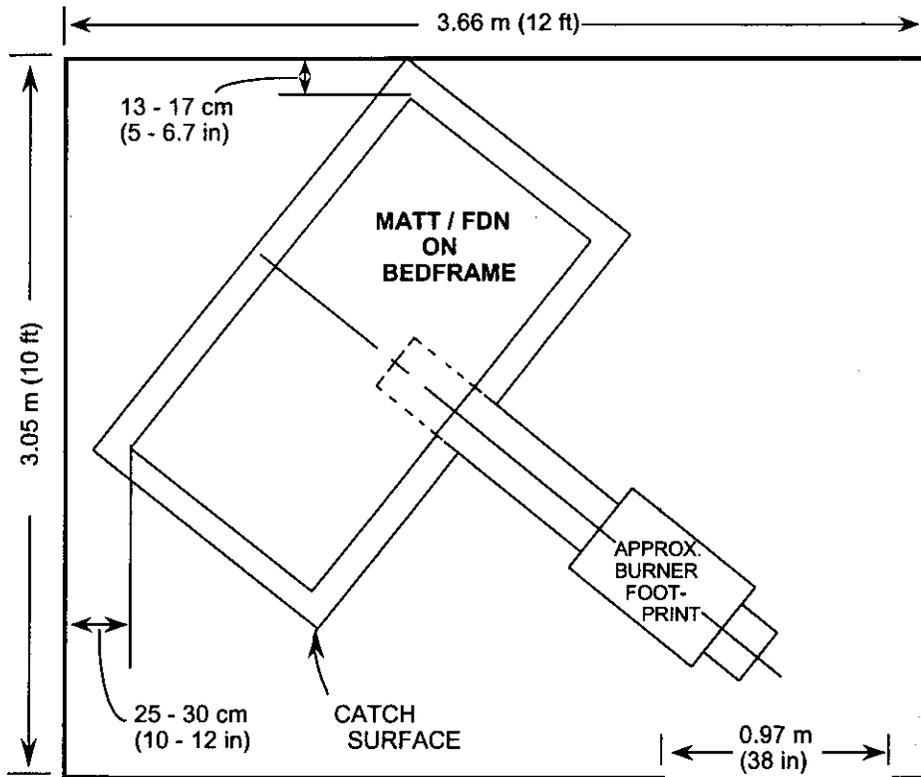


FIGURE 3. TEST ARRANGEMENT IN 3.05 m x 3.66 m (10 ft x 12 ft) ROOM; CONFIGURATION C.

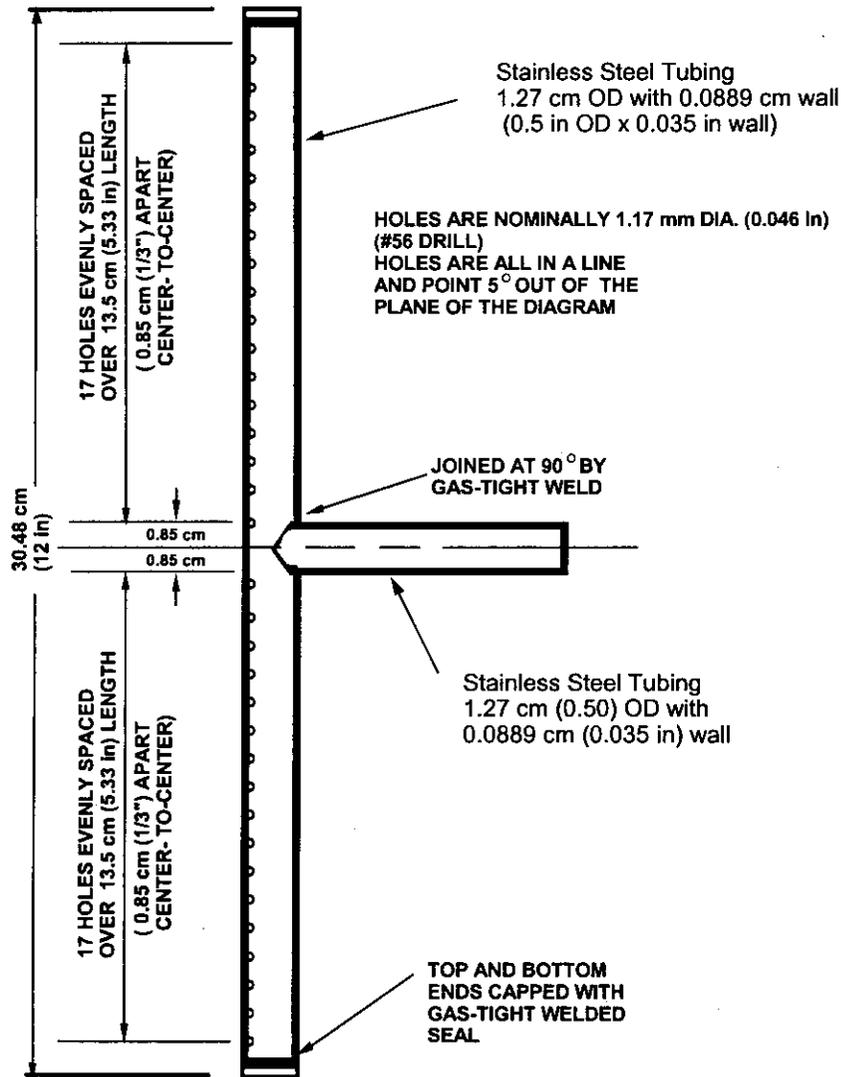


FIGURE 4. DETAILS OF HORIZONTAL BURNER HEAD.

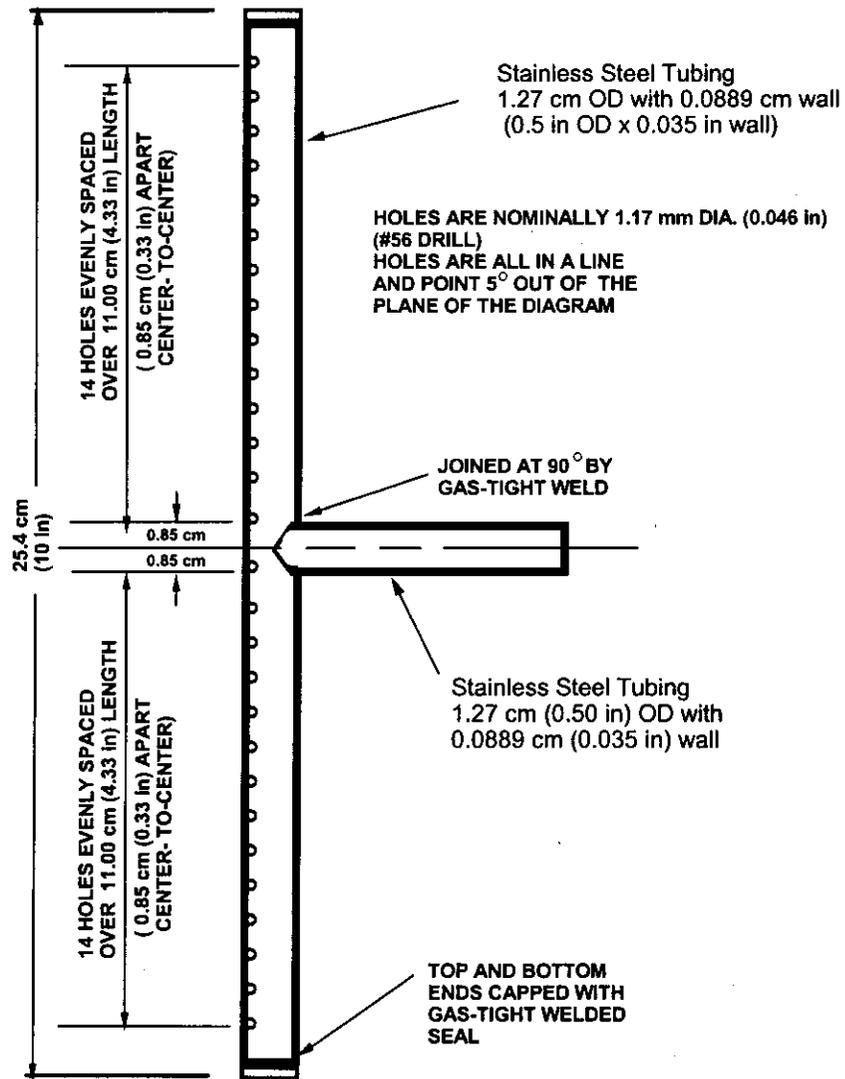


FIGURE 5. DETAILS OF VERTICAL BURNER HEAD.

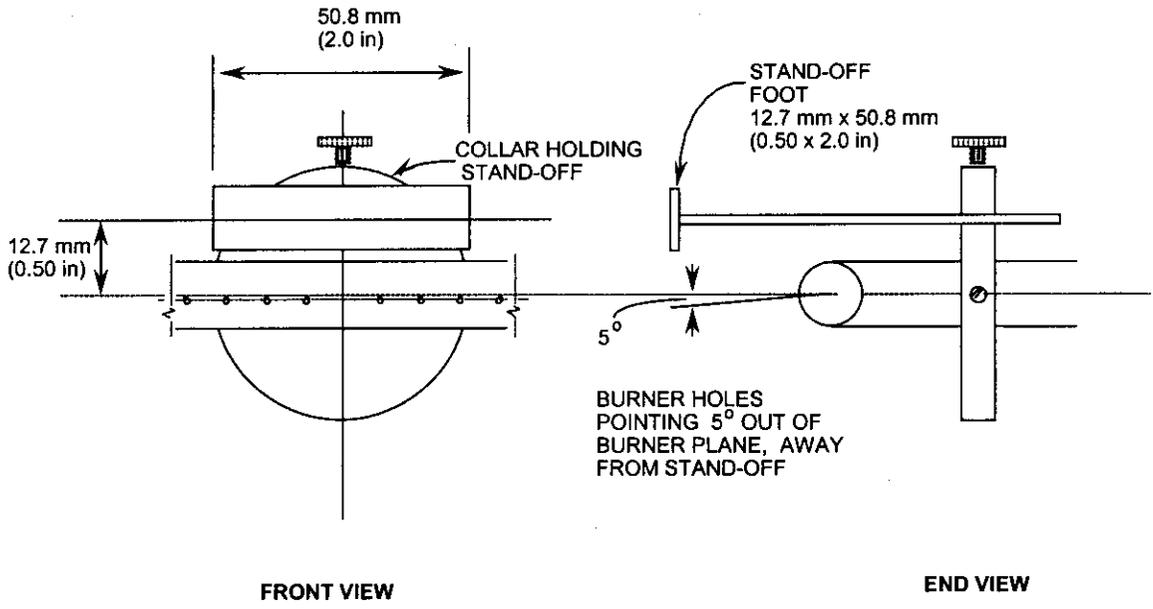


FIGURE 6. DETAILS OF BURNER STAND-OFF

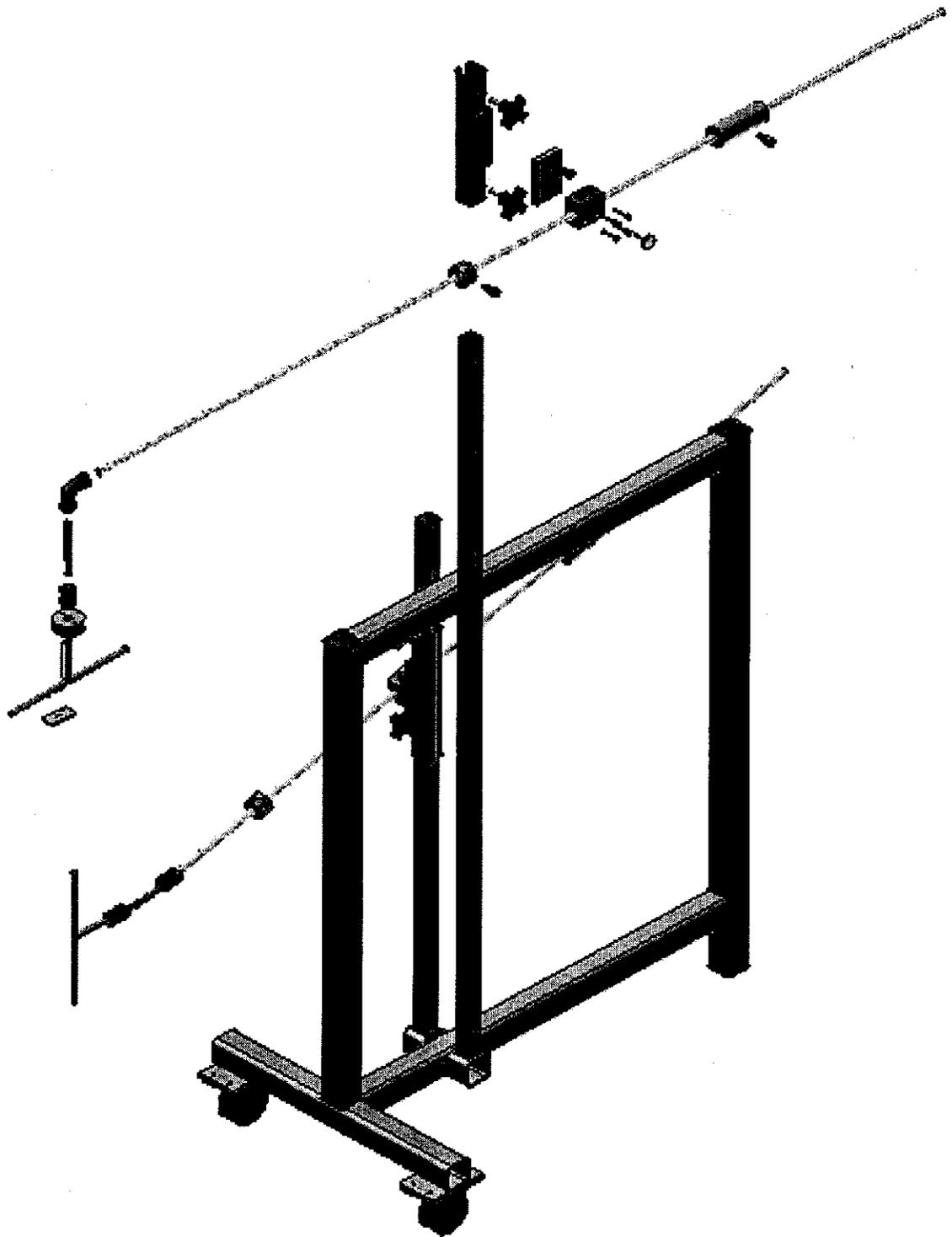


FIGURE 7. BURNER ASSEMBLY SHOWING ARMS AND PIVOTS (Shoulder Screws) IN RELATION TO PORTABLE FRAME ALLOWING BURNER HEIGHT ADJUSTMENT.

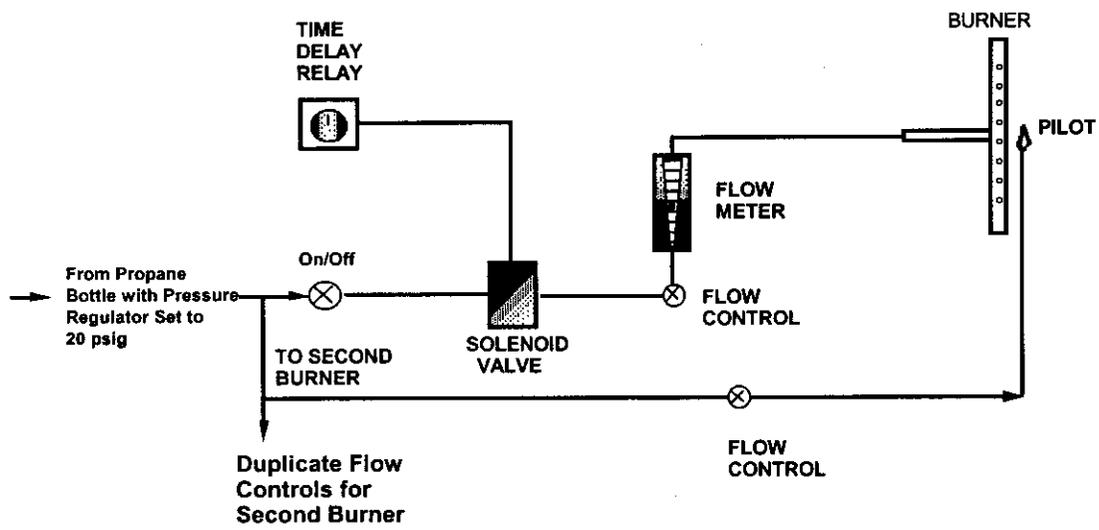


FIGURE 8. ELEMENTS OF PROPANE FLOW CONTROL FOR EACH BURNER

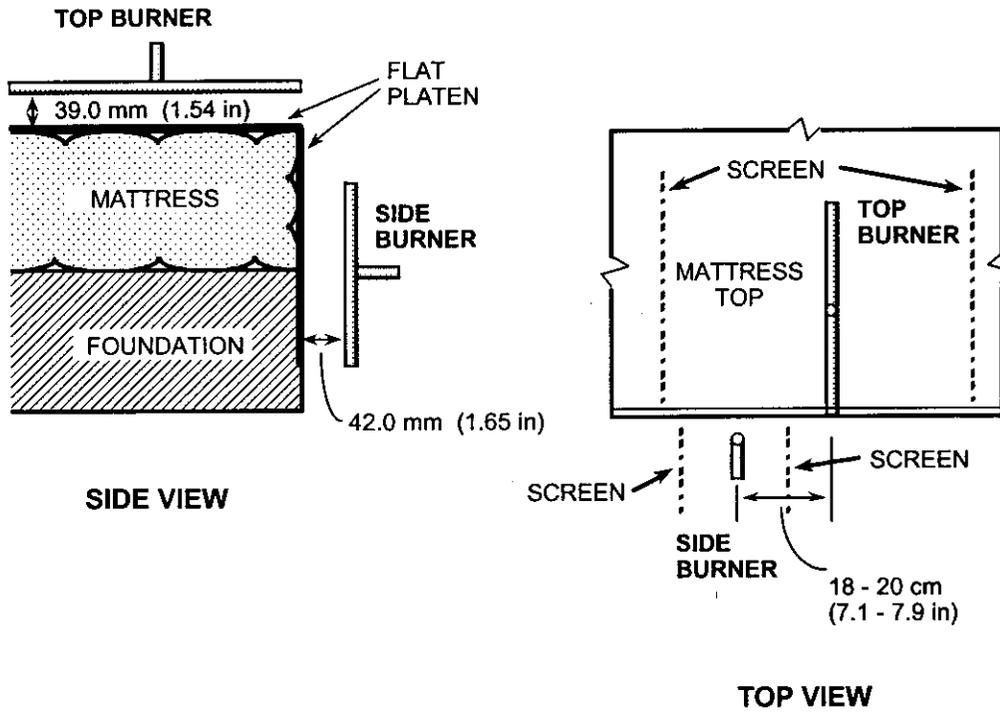
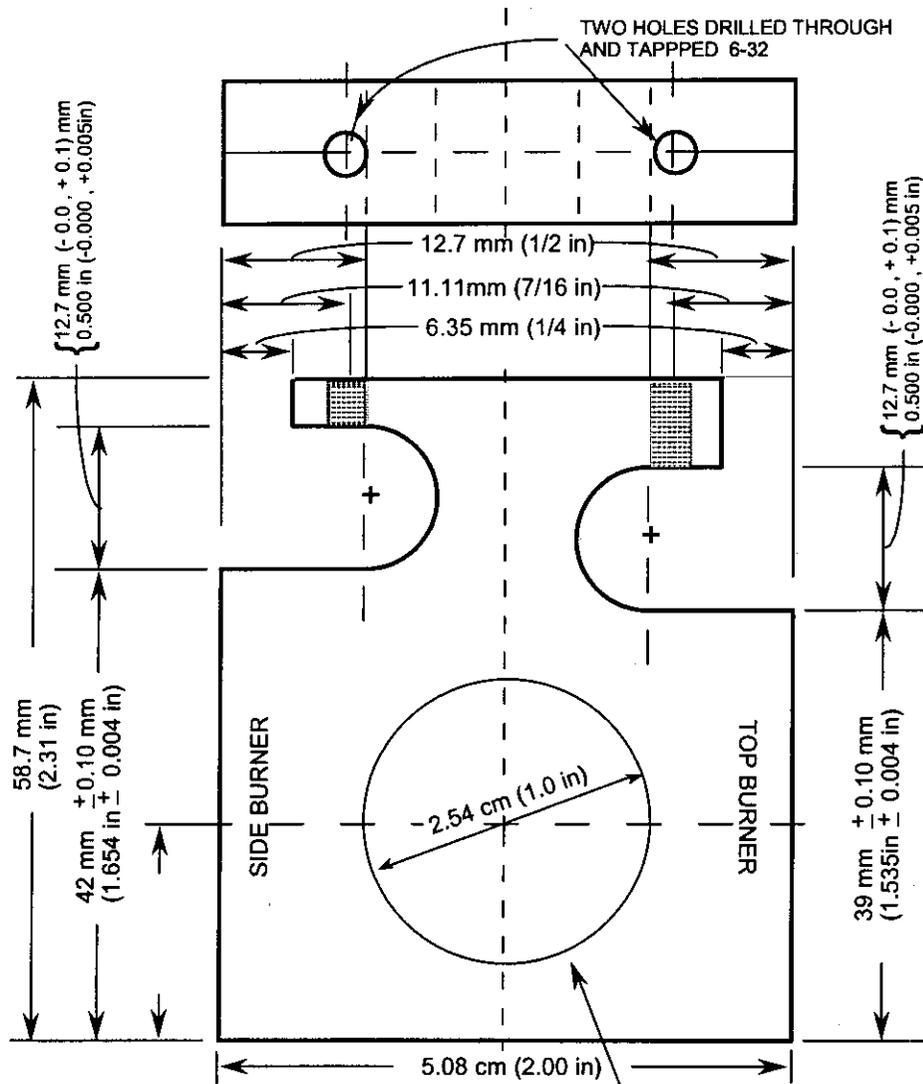


FIGURE 9. BURNER PLACEMENTS ON MATTRESS / FOUNDATION



NOTE: PUNCH WORDS SHOWN ON BOTH FLAT FACES OF JIG.

PLACEMENT AND DIAMETER NOT CRITICAL (THIS HOLE IS JUST FOR LOWERING THE WEIGHT OF THE JIG).

FIGURE 10. JIG FOR SETTING BURNERS AT PROPER DISTANCES FROM MATTRESS / FOUNDATION

Stevenson, Todd A.

From: Sophia_Azar@dca.ca.gov
Sent: Tuesday, March 29, 2005 7:54 PM
To: Stevenson, Todd A.
Cc: John_McCormack@dca.ca.gov
Subject: Comments on "Mattress NPR"



Bureau
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TB603-January

Attached below are comments (including additional attachments) on Mattress NPR from the California Bureau of Home Furnishings & Thermal Insulation.

Thank you.

(See attached file: Bureau Comments-CPSC Mattress Standard-3-29-05.doc)

(See attached file: TB603-January 2004 - final.doc)

Before The U.S. Consumer Product Safety Commission

In re:

**Mattress NPR;
Standard for the Flammability (Open Flame) of Mattresses
and Mattress/Foundation Sets; Proposed Rules, 70 Fed. Reg.
2470 (Jan. 13, 2005)**

**Public Comments on behalf of
Sealy Mattress Company**

March 29, 2005

Introduction

Sealy Mattress Company is pleased to submit these comments in response to the Notice of Proposed Rulemaking issued by the Consumer Product Safety Commission (CPSC) proposing a small open flame standard for mattresses. Initially, we would like to state that we agree in general with the comments made by Ryan Trainer on behalf of the International Sleep Products Association and Sleep Products Safety Commission. Rather than repeat those points here, we wish to highlight those points most important to Sealy. We will keep our comments below brief. We thought that it would be most efficient to provide comments and revisions to the proposed Rule directly on the text of the Rule itself, so we attach a copy of the Rule with our suggested revisions and comments for doing so, which are incorporated by reference into these comments. See Attachment I.¹

Sealy has a longstanding commitment to the adoption and implementation of sound fire safety principles for the mattress industry and thus strongly supports the goals and objectives of the proposed rule. Our comments, and the suggested proposed revisions reflected in Attachment I, are intended to make the final Rule more efficient and fair for all, including manufacturers, retailers and consumers. Implementation and enforcement of this new open flame regulation must be reasonable, rational and practical for the mattress industry as a whole throughout the entire chain of commerce. We believe that the Commission has underestimated the cost of compliance and proposed the adoption of requirements that are inconsistent with current business practice, and will increase the cost of compliance without any attendant benefits to consumers.

While each of the comments below apply fully to Sealy, other, much smaller, businesses in the mattress industry will be even more adversely affected by these new and sometimes onerous requirements set out in 1633. We ask for reasonability and common sense in initiating and enforcing a new open flame standard.

Our comments can be roughly grouped into approximately four categories: (1) The clarification of prototypes, specimens and production lots, (2) A discussion of specific technical details and requirements of the actual test, (3) The documentation and record keeping obligations, and finally (4) the preemption issue. We will cover each separately and briefly below and then rely on our specific changes and comments within the text of the proposed Rule.

(1) Prototypes, Production Lots and Specimens. First, you will see significant comment regarding the prototype concept and production lots. We are concerned that the CPSC is unnecessarily creating a significant incentive for manufacturers to limit the numbers of tests and prototypes given the costs and risks of 1633 testing. This could result in the either the artificial reduction of product choices to consumers as companies seek to control the cost of testing prototypes, or will add to the cost of compliance. These costs have not been quantified, but will be very significant in scope and financial burden. While we believe that the TB 603 “no proof of passage” or “strict outcome” model is too loose, we also believe that the proof-based model envisioned by the CPSC in its current form is too expensive and onerous for almost any manufacturer to reasonably be expected to comply with.

In other words, we believe it is better for CPSC to create a standard under which there are significant penalties if a final retail product fails the test rather than the CPSC provide for severe

¹ Sealy has also provided these comments to the Office of Management and Budget (Desk Officer for the Consumer Product Safety Commission).

penalties merely because a manufacturer cannot prove that one of its products was not adequately tested. In this regard, for any company to be reasonably confident that its product lines will comply, they must apply a safety factor in testing (i.e., assure that products pass with a margin of error). We also believe that there is an appropriate place for reasonable documentation requirements, but such requirements should not predominate.

In sum, the touchstone of the standard should be that actual types of products sold by each mattress manufacturer or importer pass the test, not that the manufacturer can prove that it thought that each production lot would pass the test. In today's fast-paced just-in-time method of manufacturing, with global sourcing and new product innovations bringing new benefits to consumers, we support application of a performance-based standard, backed by sound, but flexible, quality control and verification procedures. Adoption of a mandatory national standard with attendant penalties for non-compliance are strong incentives for manufacturers to make a safer mattress. Imposing requirements that force companies to spend significant sums of money in keeping records and creating chains of custody type of files proving that it can guarantee that product x matches prototype A will not materially advance safety and will reduce consumer choice and industry competitiveness.

Accordingly, we urge the CPSC to simplify the prototype rules (consistent with our mark-up) as well as the documentation rules. Moreover, we strongly urge the CPSC to abolish any reference to "production lots," as that is not consistent with the way that Sealy or any other major bedding manufacturer operates today or in the foreseeable future. Production lots assume long runs of discrete product made of discrete batches of components. Most major bedding manufacturers have product runs of sometimes only one (1) or two (2) pieces and rarely more than 100 products at a time. Because much of the mattress manufacturing business increasingly is customized and "just-in-time," the notion of "product lots" is a foreign concept in our industry in general, and in Sealy's operations in particular. If the concept of "production lot" contemplates imposition of "product lot" testing for every unique design, it could involve testing of literally many thousands of different mattress products, a level of testing that far exceeds what we believe CPSC has estimated for cost assessment purposes. Application of attendant record-keeping requirements for so many different "product lots" also raises practical questions, again including the unforeseen and exorbitantly high costs imposed on each business in the industry. Each product is currently marked with law tags identifying dates of manufacture, which should clearly assist in identifying and corralling noncompliant product in the unlikely event that a recall is ever necessitated by a manufacturer failing to have its product pass the open flame standard of 1633. Application of the rule as written would be unworkable for a company like Sealy, and we can only imagine the difficulty that small mattress manufacturers would have in complying.

Finally, the manufacturer should be given appropriate latitude to identify a viable quality control system that works for its manufacturing program and not be forced to fit within the CPSC's concept of production lot. The key will be at the time some manufacturer may need to initiate a recall. The CPSC can then judge how many beds must be recalled based on its judgment and conclusions on how well the manufacturer followed some reasonable quality control and product identification system, relying on the existing law labels in so doing.

(2) Technical Issues Regarding the Testing Protocol. To its knowledge, Sealy is the only manufacturer to operate its own lab. Moreover, on information and belief, Sealy has undertaken significantly more testing of its products than any other bed manufacturer. Consequently, Sealy has an abundant database of information on flammability of products and components, and detailed experiential background on the subject. Our comments set out in this section on Attachment I are, for the most part, self-explanatory or better explained in the

comment section off to the right of the text. Many of these comments have been provided in the past to members of the technical team at the CPSC.

But in general, our central comments include the abolition of Test Protocol B, which we believe has no scientific basis as a credible test set-up. For similar reasons, we believe air-flow must be kept constant and at an absolute minimum, as our experience has shown that even minimal air disturbance can affect the propagation of a flame. Any test that surrounds the randomness of fire and flame (such as 16 CFR 1632, TB 603, and proposed 16 CFR 1633) must ensure that all variables (especially with respect to the critical issue of oxygen and airflow) be kept diligently controlled. Most of our comments in this area (within the text of 1633.7) reflect this important principle.

(3) Documentation and File-Keeping Obligations. Major bedding manufacturers like Sealy often have numerous plants located strategically throughout the United States. In Sealy's case, we have a central R&D as well as purchasing/sourcing function. Sealy agrees that the 1633 open flame rule should require that a manufacturer (in this case the individual plant) prove that its product will pass the 1633 open flame standard. But the CPSC is asking for far too much from any manufacturer (especially when they are free standing manufacturing facilities or plants) for it to test each production model to prove that it passes the 1633 test or matches up with its prototype, which is what the current proposed rule will ultimately require under Sections 1633.4 and 1633.5.

The current proposed rule leaves the manufacturer in the unenviable position of documenting its file so that it can prove that it can "demonstrate, on an objectively reasonable basis, that a change in *any* component, material, or method of construction will not cause the prototype to exceed the test criteria specified in Sec. 1633.3(b)" (emphasis added) or test each product three times as a prototype. The rule must be simplified and the onerous burden on each individual plant must be relieved. Open flame testing is extremely costly and can be extremely dangerous. Sealy fully agrees that manufacturers should adopt mechanisms to ensure that beds manufactured at each plant are compliant with the open flame test in 1633, but this goal can more reasonably be accomplished by requiring reasonable prototype testing. This does not, in our view, mean requiring testing of each and every permutation of products and then to adopt rigorous controls to assure that production models are manufactured to that prototype's exact specification. Rather, companies should be permitted to use their experience to test "worst case" products, and to change components in a manner that reasonably assures that production units will not fail the prototype test. Worst case products are defined as having the highest combustible fuel load and the most complex structures or number of possible failure points or seams where materials are sewn together. Each plant, if it is manufacturing production units to a passing prototype and following best practice quality control, should not be forced to expend exorbitant sums to test additional products simply because they would constitute a different "prototype" if quality control measures assure that these units will meet the overall standard.

In the case of large national manufacturer such as Sealy, with its centralized operations (or even licensors who can meet the test set out below), a requirement that each facility or plant test numerous prototypes or specimens to prove that its product passes the test makes no sense. The rule should instead require the manufacturer to prove that its centrally designed and specified prototype passes the open flame test of 1633 as currently required by 1633 and then the manufacturer should have to prove that the products built at each plant meet the specification of that passing prototype in all material respects, using its own quality control procedures. The prototype designer should prove through rigorous testing procedures set out under 1633.7 that the prototype passes the test as is envisioned in 1633.7. Then each plant within the corporate or

licensee chain relying on a specific “prototype test” should be able to manufacture products subject to that prototype test if it can prove the following:

- (1) The plant is a subsidiary or licensee of the prototype tester;
- (2) The plant is constructing mattresses from a common design specification (that has proven to have passed the test set out in 1633.7); including interchangeable components.
- (3) The plant is adhering to a common and rigorous quality assurance program that is identical in all material respects to the prototype tester’s quality assurance program and follows any requirements set out by the prototype tester for quality assurance.
- (4) The plant is part of a centrally managed materiel procurement program generated by the prototype tester.
- (5) The plant uses precisely the same components as the prototype tester (in the case of disparate suppliers, a showing that the specification is the same or technically/scientifically similar to the components in the passing prototype.
- (6) Occasional audit tests (1633.7 tests) on a semi-annual or reasonably similar basis to confirm that the quality assurance program at the plant level is working.

If that plant/manufacturer cannot prove to the CPSC that it complies with each element of this program at any time, it should be subject to the full array of enforcement remedies by the Commission. Consequently, we urge the CPSC to simplify the manufacturer’s obligation to test.

We have **not** made the requisite changes in the text of the proposed rule to reflect this concept as we have with the other suggested changes, but we strongly urge the CPSC to arrive at a testing protocol that requires testing of prototypes and then strong management and oversight by the manufacturer of quality control within the company. We share a common goal with the agency of adopting a new open flame test method for mattresses and an associated compliance program that will maintain product choice, provide incentive for compliance, and minimize costs. We believe the approach outlined above will advance these goals far better than the proposed requirements.

(4) Preemption. Many in the mattress industry have worked diligently with the CPSC, NIST and other state and federal agencies to arrive at a fair, safe and workable national open flame standard for mattresses. Our collective good faith and hard work will be at risk if states pursue differing state legislation/regulation on the same topic. We therefore urge the CPSC to make a clear statement in this Rule package that **upon final publication (and notwithstanding the ultimate enforcement date) of 1633, it is the national legal standard in the United States for the regulation of flammability of mattresses and foundations, and that no state or sub-division can adopt a standard which is not identical to the national requirement.**²

Even the hint of a question or open issue regarding the preemption or supremacy of the federal rule may lead a state legislature or local city counsel to promulgate dissimilar or even

² Sealy joins with ISPA/SPSC in urging the CPSC to initiate effectiveness and enforcement on the January or July (whichever comes first) twelve months after the publication of the standard. Given the complications a large company such as Sealy and its thousands of retailers will have in rolling this new product out effectively, smaller manufacturers could be bankrupted or severely damaged by a too quick roll out of the standard or enforcement.

contradictory open flame standards, leaving the industry with no alternative other than to file a costly lawsuit to establish that a state is not allowed to legislate or regulate in this area.

Moreover, while the question is relatively clear at this moment that the Flammable Fabrics Act and this Section 1633 preempts state law on mattress flammability, the issue may not be so clear ten or more years from now. Accordingly, we implore the CPSC to make a clear statement directly in the text of 1633 that this rule preempts any state or local regulation, law or ordinance on the subject. Sealy and our colleagues in the mattress industry have worked in good faith with the CPSC to develop a national open-flame standard for mattresses. Failure to include preemption language in the final rule would jeopardize our good-faith efforts. Please do not allow this to occur by failing to be clear on the preemptive status of the CPSC's requirements for our entire national industry.³

Conclusion

We thank the CPSC for the opportunity to make these comments. We urge the staff to adopt revisions in the proposed rule in accordance with these comments and those of ISPA. We stand prepared to assist in any way to implementing a fair and efficient standard for the mattress industry.

Respectfully submitted by Sealy Mattress Company.



By: Michael Q. Murray
Vice President – Legal Counsel

³ We also urge the CPSC to consider ISPA's request for clear language regarding the pre-emption of civil litigation claims in the event that the manufacturer can prove that it was adhering to the federally mandated standard (such as with lighters and medical devices).

ATTACHMENT I

List of Subjects in 16 CFR Part 1633

Consumer protection, Flammable materials, Labeling, Mattresses and mattress pads, Records, Textiles, Warranties.

For the reasons stated in the preamble, the Commission proposes to amend Title 16 of the Code of Federal Regulations by adding a new part 1633 to read as follows:

PART 1633--STANDARD FOR THE FLAMMABILITY (OPEN -FLAME) OF MATTRESSES and MATTRESS AND FOUNDATION SETS

Subpart A--The Standard

Sec.

1633.1 Purpose, scope and applicability.

1633.2 Definitions.

1633.3 General requirements.

1633.4 Prototype testing requirements.

1633.5 Prototype pooling and confirmation testing requirements.

1633.6 Quality assurance requirements.

1633.7 Mattress test procedure.

1633.8 Findings.

1633.9 Glossary of terms.

Subpart B--Rules and Regulations

1633.10 Definitions.

1633.11 Records.

1633.12 Labeling.

1633.13 Tests for guaranty purposes, compliance with this section, and "one of a kind" exemption.

Subpart C--Interpretations and Policies

1633.14 Policy clarification on renovation of mattresses.

Figure 1 to Part 1633 --Test Assembly, Shown in Furniture Calorimeter (Configuration A)

Figure 2 to Part 1633 --Test Arrangement in 3.05m x 3.66m (10 ft x 12 ft) Room (Configuration B)

Figure 3 to Part 1633 --Details of Horizontal Burner Head

Figure 4 to Part 1633 --Details of Vertical Burner Head

Figure 5 to Part 1633 --Details of Burner Stand-off

Figure 6 to Part 1633 --Burner Assembly Showing Arms and Pivots (Shoulder Screws), in Relation to, Portable Frame Allowin g Burner Height Adjustment

Figure 7 to Part 1633 --Elements of Propane Flow Control for Each Burner

Figure 8 to Part 1633 --Jig for Setting Mattresses and Foundation Sides in Same Plane

Figure 9 to Part 1633 --Burner Placements on Mattress/Foundation

Figure 10 to Part 1633 --Jig for Setting Burners at Proper Distances from Mattress/Foundation

Figure 11 to Part 1633 --Diagrams for Glossary of Terms

Appendix A to Part 1633 --Calibration of Propane Flowmeters

Appendix B to Part 1633 --Burner Operation Sequence

Authority: 15 U.S.C. 1193, 1194.

Subpart A--The Standard

Sec. 1633.1 Purpose, scope, and applicability.

(a) Purpose. This Part 1633 establishes flammability requirements that all mattress and mattress and foundation sets must meet before sale or introduction into commerce. The purpose of the standard is to reduce deaths and injuries associated with mattress fires by limiting the size of the fire generated by a mattress or mattress and foundation set during a thirty minute test.

(b) Scope. (1) All mattresses and all mattress and foundation sets, as defined in Sec. 1633.2(a) and Sec. 1633.2(b), of any size, manufactured or imported after [the effective date of this standard] are subject to the requirements of the standard.

(2) One-of-a-kind mattresses and foundations may be exempted from testing under this standard in accordance with Sec. 1633.13(c).

(c) Applicability. The requirements of this part 1633 shall apply to each "manufacturer" (as that term is defined in Sec. 1633.2(i)) of mattresses and/or mattress and foundation sets which are manufactured for sale in commerce.

(d) Upon publication of the final Part 1633, pursuant to the Flammable Fabrics Act (cit.), this Part 1633 shall preempt all state and local regulations, ordinances or rules of any kind regarding flammability of mattresses and foundations regardless of ignition source (cigarette, open flame, etc.) and regardless of how the regulation or ordinance is characterized.

Or

"[N]o State or political subdivision of a State may establish or continue in effect with respect to any flame or flammability requirement for mattresses or other products covered under this regulation which is different from, or in addition to, any requirement applicable under this Part 1633 to products covered under this part 1633.

Sec. 1633.2 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 purposes of this part 1633.

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

(1) This term includes, but is not limited to, adult mattresses, youth mattresses, crib mattresses (including portable crib mattresses), bunk bed mattresses, futons, flip chairs without a permanent back or arms, sleeper chairs, and water beds or air mattresses if they contain upholstery material between the ticking and the mattress core. Mattresses used in or as part of upholstered furniture are also included; examples are convertible sofa bed mattresses, corner group mattresses, day bed mattresses, roll-away bed mattresses, high risers, and trundle bed mattresses. See Sec. 1633.9 Glossary of terms, for definitions of these items.

(2) This term excludes mattress pads, mattress toppers (items with resilient filling, with or without ticking, intended to be used with or on top of a mattress), sleeping bags, pillows, liquid and gaseous

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filled tickings, such as water beds and air mattresses that contain no upholstery material between the ticking and the mattress core, upholstered furniture which does not contain a mattress, 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 Sec. 1633.9 Glossary of terms, for definitions of these items.

(b) Foundation means a ticking covered structure used to support a mattress or sleep surface. The structure may include constructed frames, foam, box springs, or other materials, used alone or in combination.

(c) Ticking means the outermost layer of fabric or related material of a mattress or foundation. It does not include any other layers of fabric or related materials quilted together with, or otherwise

[[Page 2495]]

attached to, the outermost layer of fabric or related material.

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

(e) Edge seam means the seam or border edge of a mattress or foundation that joins the top and/or bottom with the side panels.

(f) Tape edge means an edge seam made by using binding tape to encase and finish raw edges.

(g) Binding tape means a fabric strip used in the construction of some edge seams.

(h) Seam thread means the thread used to form stitches in construction features, seams, and tape edges.

(i) Renovated means a mattress or foundation originally manufactured on one date, but on a subsequent date after original sale to a consumer or user of the mattress, an individual, company or other organization (hereinafter "Manufacturer"), in an effort to restore to an earlier condition and for the purpose of resale to the public, one or more layers of the mattress or foundation (including tick, fiber or foam or other layer) is removed or added to the product. The term Renovated shall not include simple sanitization or sterilization of a previously used product as those terms are understood under most state statutes unless removal or addition of layers are included in the process. For purposes of this subpart, 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. Renovation as defined above removes any responsibility for meeting the regulations from the original manufacturer.

(j) Manufacturer means an individual plant or factory at which mattresses and/or mattress and foundation sets are manufactured, assembled or Renovated. For purposes of this Part 1633, an importer is considered a manufacturer.

(k) Prototype means a specific design of mattress and corresponding foundation, if any, which, except as permitted by Sec. 1633.4(b), is the same in all material respects as, and serves as a model for, production units intended to be introduced into commerce.

(l) Prototype pooling means a cooperative arrangement whereby one or more manufacturers may rely on a prototype produced by a different

Comment: Renovation, in the form described within these rules, is "manufacturing, pure and simple" and Renovators should be held to the same standard as a manufacturer. See, also, ISPA extended discussion on this point in its submission.

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manufacturer. To pool prototypes, all materials used in a qualifying mattress and foundation prototype set must be identical in composition, amount and assembly processes.

(m) Confirmation test means a pre-market test conducted by a manufacturer that is relying on a pooled prototype produced by another manufacturer. A confirmation test must be conducted in accordance with the procedures set forth in Sec. 1633.7 to confirm that the manufacturer can produce a mattress and corresponding foundation, if any, that is identical to the prototype in all material respects.

(n) Specimen means a mattress and corresponding foundation, if any, tested under this part.

(o) Twin size means any mattress with the dimensions 38 inches (in) (96.5 centimeters (cm)) x 74.5 in. (189.2 cm), all dimensions may vary by $\frac{1}{2}$ in. (1.3 cm)

(p) Qualified prototype means a prototype that has been tested in accordance with Sec. 1633.4(a) and meets the criteria stated in Sec. 1633.3(b).

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

Sec. 1633.3 General requirements.

(a) Summary of test method. The test method set forth in Sec. 1633.7 measures the flammability (fire test response characteristics) of a mattress specimen by exposing the specimen to a specified flaming ignition source and allowing it to burn freely under well-ventilated, controlled environmental conditions. The flaming ignition source shall be a pair of propane burners. These burners impose differing fluxes for differing times on the top and sides of the specimen. During and after this exposure, measurements shall be made of the time-dependent heat release rate from the specimen, quantifying the energy generated by the fire. The rate of heat release must be measured by means of oxygen consumption calorimetry.

(b) Test criteria. When testing the mattress or mattress and foundation set in accordance with the test procedure set forth in Sec. 1633.7, the specimen shall comply with both of the following criteria:

(1) The peak rate of heat release shall not exceed 200 kilowatts ($''kW''$) at any time within the 30 minute test; and

(2) The total heat release shall not exceed 15 megajoules ($''MJ''$) for the first 10 minutes of the test. In the interest of safety, the test operator should discontinue the test and record a failure if a fire develops to such a size as to require suppression for the safety of the facility.

(c) Testing of mattress and corresponding foundation. Mattresses to be offered for sale with a foundation shall be tested with that foundation. Mattresses designed and sold for use without a foundation shall be tested alone, however, there shall be no requirement to test any mattress alone merely because it may be or is allowed to be sold alone.

(d) Compliance with this standard. Each mattress or mattress and foundation set sold or introduced into commerce after [the effective date of this standard] shall meet the test criteria specified in paragraph (b) of this section and otherwise comply with all applicable requirements of this part 1633. Other than the provisions of Part 1632 of this Chapter, there shall be no additional obligation of mattress

Comment: The addition of the concept is unnecessary as long as CPSC requires the manufacturer to maintain a reasonable quality control program, which can be reviewed by CPSC at the time of any potential recall. Please refer to our comments that discuss the difficulty of defining a "Production Lot" in the mattress manufacturing context.

Deleted: (1) Production lot means any quantity of finished mattresses or mattress and foundation sets that are produced in a production interval defined by the manufacturer, and are intended to replicate a specific prototype that complies with this part 1633.

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Comment: Unlike pairs of shoes, mattresses and foundations can be and are occasionally sold separately. Manufacturers should not be required to test their mattresses with other manufacturers' foundations and vice versa.

manufacturers to comply with additional or inconsistent state or local rules governing or putatively governing mattress flammability.

Comment: See comment above regarding preemption.

Sec. 1633.4 Prototype testing requirements.

(a) Except as otherwise provided in paragraph (b) of this section, each manufacturer shall cause three specimens of each prototype to be tested according to Sec. 1633.7 and obtain passing test results according to Sec. 1633.3(b) before selling or introducing into commerce any mattress or mattress and foundation set based on that prototype, unless the manufacturer complies with the prototype pooling and confirmation testing requirements in Sec. 1633.5.

(b) Notwithstanding the requirements of paragraph (a) of this section, a manufacturer may sell or introduce into commerce a mattress or mattress and foundation set based on a prototype that has not been tested according to Sec. 1633.3 (b) if that prototype differs from a qualified prototype only with respect to:

(1) Mattress/foundation size (e.g., twin, queen, king);

(2) Ticking, unless the ticking of the qualified prototype has characteristics (such as chemical treatment or special fiber composition) designed to improve performance on the test prescribed in this part; and/or

(3) The manufacturer can demonstrate, on an objectively reasonable basis, that a change in any component, material, or method of construction will not cause the prototype to exceed the test criteria specified in Sec. 1633.3(b).

(c) All tests must be conducted on specimens that are no smaller than a twin size, unless the largest size mattress or mattress and foundation set produced is smaller than a twin size, in which case the largest size must be tested.

(d) (1) If each of the three specimens meets both the criteria specified in Sec. 1633.3(b), the prototype shall be qualified. If any one (1) specimen fails to meet the test criteria of Sec. 1633.3(b), the prototype is not qualified, unless and until that manufacturer takes corrective measures, tests three new specimens, and all three new specimens meets the criteria of Sec. 1633.3(b).

(2) Any manufacturer may produce mattresses and foundations, if any, for sale in reliance on prototype tests performed before [the effective date of this Standard], provided that such tests were conducted in accordance with all requirements of this section and Sec. 1633.7 and yielded passing results according to the test criteria of Sec. 1633.3 (b).

Comment: We believe that the prototype testing standard must be loosened to allow for aberrant failures. We believe this revision merely clarifies the requirement.

Sec. 1633.5 Prototype pooling and confirmation testing requirements.

(a) Prototype pooling. One or more manufacturers may rely on a prototype produced by another party that has qualified a prototype, provided that:

(1) The prototype meets the requirements of Sec. 1633.4; and

(2) The mattresses or mattress and foundation sets being produced based on the prototype have components, materials, and methods of construction that are identical in all material respects to the prototype except as otherwise permitted by Sec. 1633.4(b).

(b) Confirmation testing. Any manufacturer ("Manufacturer B") producing mattresses or mattress and foundation sets in reliance on a

Comment: This allows for a party other than a manufacturer to create prototypes. See our comments in our cover submission.

Deleted: manufacturer

prototype produced by another manufacturer ("Manufacturer A") shall

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cause to be tested in accordance with Sec. 1633.7 at least one (1) specimen produced by Manufacturer B of each prototype of Manufacturer A upon which said Manufacturer B is relying. The tested specimen must meet the criteria under Sec. 1633.3(b) before Manufacturer B may sell or introduce any mattresses or mattress and foundation sets based on the pooled prototype.

(c) Confirmation test failure. (1) If the confirmation test specimen fails to meet the criteria of Sec. 1633.3(b), the manufacturer thereof shall not sell any mattress or mattress and foundation set based on the same prototype until that manufacturer takes corrective measures, tests a new specimen, and the new specimen meets the criteria of Sec. 1633.3(b).

(2) If a confirmation test specimen fails to meet the criteria of Sec. 1633.3(b), the manufacturer thereof must notify the manufacturer of the prototype of the test failure.

Sec. 1633.6 Quality assurance requirements.

(a) Quality assurance. Each manufacturer shall implement a quality assurance program to ensure that mattresses and mattress and foundation sets manufactured for sale are identical in all material respects to the prototype on which they are based. At a minimum these procedures shall include:

(1) Controls, including incoming inspection procedures, of all mattress and mattress and foundation set components and materials to ensure that they are identical in all material respects to those used in the prototype. Alternative suppliers of materials may issue certificates of analysis and compliance on all materials that will effect fire resistance behavior.

and

(3) Inspection of mattresses and mattress and foundation sets produced for sale sufficient to demonstrate that they are identical to the prototype in all material respects.

(b) Production testing. Manufacturers are required to conduct, as part of the quality assurance program, random testing of mattresses and mattress and foundation sets being produced for sale according to the requirements of Sec. 1633.3 and 1633.7.

(c) Failure of mattresses produced for sale to meet flammability standard. (1) Sale of mattresses and foundations. If any test performed for quality assurance yields results which indicate that any mattress or mattress and foundation set of a production lot does not meet the criteria of Sec. 1633.3(b), or if a manufacturer obtains test results or other evidence that a component or material or construction/assembly process used could negatively affect the test performance of the mattress as set forth in Sec. 1633.3(b), the manufacturer shall cease production and distribution in commerce of such mattresses and/or mattress and foundation sets until corrective action is taken.

(2) Corrective actions. A manufacturer must take corrective action when any mattress or mattress and foundation set is manufactured or imported for sale fails to meet the flammability test criteria set forth in Sec. 1633.3(b).

Comment: See our comments in the cover brief. Mattress manufacturers generally do not build in "production lots" and introducing this concept in the regulation would significantly confuse and complicate the already hard work facing mattress manufacturers who will have to abide by this new standard.

Deleted: (2) Designation of a production lot that is represented by the 1 prototype;

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Sec. 1633.7 Mattress test procedure.

(a) Apparatus and test materials (1) Calorimetry. The rate of heat release must be measured by means of oxygen consumption calorimetry. The calibration should follow generally accepted practices for calibration. The calorimetry system shall be calibrated at a minimum of two (2) calibration points, at 75 kW and 200 kW, and shall be calibrated at a minimum once per year. Records for calibration must be maintained at the testing facility.

(2) Testroom. The testroom must have Test Configuration A.

(i) Test Configuration A. (an open calorimeter (or furniture calorimeter)). In this configuration, the specimen to be tested is placed under the center of an open furniture calorimeter. Figure 1 of this part shows the test assembly atop a bedframe and catch surface. The specimen shall be placed under an open hood which captures the entire smoke plume and is instrumented for heat release rate measurements. The area surrounding the test specimen in an open calorimeter layout shall be sufficiently large that there are no heat re-radiation effects from any nearby materials or objects. The air flow to the test specimen should be symmetrical from all sides. The air flow to the calorimeter hood shall be sufficient to ensure that the entire fire plume is captured, even at peak burning. Skirts may be placed on the hood periphery to help assure this plume capture, if necessary, though they must not be of such an excessive length as to cause the incoming flow to disturb the burning process. Skirts must also not heat up to the point that they contribute significant re-radiation to the test specimen. The air supply to the hood shall be sufficient that the fire is not in any way limited or affected by the available air supply. The fire plume should not enter the hood exhaust duct. Brief (seconds) flickers of flame that occupy only a minor fraction of the hood exhaust duct inlet cross-section are not a problem since they do not signify appreciable suppression of flames.

(2) Location of test specimen. The location of the test specimen is shown in Figure 2 of this part. The angled placement is intended to minimize the interaction of flames on the side surfaces of the test specimen with the room walls. One corner of the test specimen shall be 13 centimeters (cm) to 17 cm from the wall and the other corner shall be 25 cm to 30 cm from the wall. The test room shall contain no other furnishings or combustible materials except for the test specimen.

(3) Bed frame. For twin size mattresses, the specimen shall be placed on top of a welded bed frame (1.90 m by 0.99 m by 115 mm high; 75 in by 39 in by 4.5 in high) made from 38 mm (1.5 in) steel angle. The frame shall be completely open under the foundation except for two crosspieces, 25 mm wide (1 in) at the $\frac{1}{3}$ length points. If testing a size other than twin, the relationship of the mattress to the frame shall be comparable to that specified in this paragraph.

(4) Catch pan. The bed frame feet shall rest on a surface of either calcium silicate board or fiber cement board, 13 mm (0.5 in) thick, 2.11 m by 1.19 m (83 in by 47 in). The board serves as a catch surface for any flaming melt/drip material falling from the bed assembly and may be the location of a pool fire that consumes such materials. This surface must be cleaned between tests to avoid build-up of combustible residues.

(5) Ignition source. (i) General. The ignition source shall consist

Comment: We believe this is self-explanatory.

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B

Comment: We believe Test configuration B is improper as the airflow to the sample will not be symmetrical to all sides of the specimen and thus there is significant likelihood of aberrant results.

Deleted: (ii) Test Configuration B. The test room shall have dimensions 3.05 meters (m) 25 millimeters (mm) by 3.66 m 25 mm by 2.44 m 25 mm (10 feet (ft) by 12 ft by 8 ft) high. The specimen is placed within the burn room. All smoke exiting from the room is caught by a hood system instrumented for heat release rate measurements. The room shall have no openings permitting air infiltration other than a doorway opening 0.97 m 6.4 mm by 2.03 m 6.4 mm (38 in by 80 in) located as indicated in Figure 2 of this part and other small openings as necessary to make measurements. Construct the test room of wood or metal studs and line it with fire-rated wallboard or calcium silicate board. Position an exhaust hood outside of the doorway so as to collect all of the combustion gases. There shall be no obstructions in the air supply to the set-up.

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Comment: We do not believe there is scientific support for this finding or statement.

Deleted: Lining this surface with aluminum foil to facilitate cleaning is not recommended since this might increase fire intensity via reflected radiation.

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of two T-shaped burners as shown in Figures 3 and 4 of this part. One burner impinges flames on the top surface of the mattress. The second burner impinges flames on the side of the mattress and on the side of the foundation. Each of the burners shall be constructed from stainless steel tubing (12.7 mm diameter with 0.89 0.5 mm wall thickness; 0.50

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in diameter with 0.035 0.002 in wall). Each burner shall incorporate a stand-off to set its distance from the test specimen surface (Figure 5 of this part). The standoff or foot should not be in physical contact or place a load on the mattress or foundation surfaces. Both burners shall be mounted with a

but the side burner is locked in place to prevent movement about this pivot in normal usage. The top burner, however, is free to rotate about its pivot during a burner exposure (Figure 6 of this part). The combination of burner stand-off distance and propane gas flow rate to the burners determines the heat flux they impose on the surface of the test specimen so that both of these parameters are tightly controlled.

(ii) Top surface burner. The T head of the top surface burner (horizontal burner, Figure 3 of this part) shall be 305 2 mm (12 0.08 in) long with gas tight welded plugs in each end. Each side of the T shall contain 17 holes equally spaced over a 135 mm length (8.5 mm 0.1 mm apart; 0.333 0.005 in). The holes on each side shall begin 8.5 mm (0.33 in) from the centerline of the burner head. The holes shall be drilled with a 56 drill and are to be 1.17 mm to 1.22 mm (0.046 in to 0.048 in) in diameter. The holes shall be pointed 5[deg] out of the plane of the Figure. This broadens the width of the heat flux profile imposed on the surface of the test specimen.

(iii) Side surface burner. The T head of the side surface burner (vertical burner) shall be constructed similarly to the top surface burner, as shown in Figure 4 of this part, except that its overall length shall be 254 2 mm (10 0.08 in). Each side of the burner head shall contain 14 holes spaced evenly over a 110 mm length (8.5 mm 0.1 mm apart; 0.333 0.005 in). The holes shall be drilled with a 56 drill and are to be 1.17 mm to 1.22 mm (0.046 in to 0.048 in) in diameter. The holes shall be pointed 5[deg] out of the plane of the Figure.

(v) Frame. Figure 6 shows the frame that holds the burners and their pivots, which are adjustable vertically in height. All adjustments (burner height, burner arm length from the pivot point, counterweight positions along the burner arm) are facilitated by the use of knobs or thumbscrews as the set screws. The three point footprint of the burner frame, with the two forward points on wheels, facilitates burner movement and burner stability when stationary.

(vi) Arms. The metal arms attached to the burners shall be attached to a separate gas control console by flexible, reinforced plastic tubing. The gas control console is mounted separately so as to facilitate its safe placement outside of the test room throughout the test procedure. The propane gas lines running between the console and the burner assembly must be anchored on the assembly before running to the burner inlet arms. A 1.5 m 25 mm (58 in 1 in) length of flexible, reinforced tubing between the anchor point and

Comment: Add appropriate plus or minus designation.

Comment: Add appropriate plus or minus designation.

Deleted: foot

Comment: Foot is not required only the required offset from the surface.

Comment: Pivots should not be required, only that the burners must be perpendicular to each other.

Deleted: mechanical pivot point

Deleted: and ¶ is lightly weighted so as to exert a downward force on the mattress top ¶ through its stand-off foot so that the burner follows a receding top ¶ surface on the test specimen

Comment: There are no scientific findings regarding the stand off foot representing a "bed clothes load."

Comment: . Add plus or minus designations throughout

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Deleted: (iv) Burner stand-off. The burner stand-off on each burner shall ¶ consist of a collar fixed by a set screw onto the inlet tube of the ¶ burner head (Figure 5 of this part). The collar shall hold a 3 mm ¶ diameter stainless steel rod having a 12.7 mm by 51 mm by (2-2.5 mm) ¶ thick (0.5 in by 2 in by (0.08-0.10) in thick) stainless steel pad ¶ welded on its end with its face (and long axis) parallel to the T head ¶ of the burner. The foot pad shall be displaced about 10 mm to 12 mm ¶ from the longitudinal centerline of the burner head so that it does not ¶ rest on the test specimen in an area of peak heat flux. A short section ¶ (9.5 mm outer diameter ('OD'), about 80 mm long; ¶ 3/8 in OD, about ¶ 3.2 in long) of copper tubing shall be placed in the inlet gas line ¶ just before the burner to facilitate making the burner nominally ¶ parallel to the test specimen surface (by a ... [1])

the end of each burner inlet allows free movement of the top burner about its pivot point.

\1\ Fiber-reinforced plastic tubing (6 mm ID by 9.5 mm OD; \1/4\ inch ID by \3/4\ inch OD) made of PVC should be used.

(vii) Burner head. Each burner head shall have a separate pilot light consisting of a 3 mm OD (\1/8\ in OD) copper tube with an independently-controlled supply of propane gas. The tube terminates within 10 mm of the center of the burner head. Care must be taken to set the pilot flame size small enough so as not to heat the test specimen before the timed burner exposure is begun.

(viii) Flow control system. Each burner shall have a flow control system capable of delivering and maintaining a constant flow rate of the type shown in Figure 7 of this part. Propane gas from a source such as a bottle is reduced in pressure to approximately 70 kilopascals ('kPa') (20 pounds per square inch gauge ('psig')) and fed to the system shown in Figure 8 of this part. The gas flow to the burner is delivered in a square-wave manner (constant flow with rapid onset and termination) by means of the solenoid valve upstream of the flowmeter. An interval timer (accurate to 0.2 s) determines the burner flame duration. The pilot light assures that the burner will ignite when the solenoid valve opens \2\. Useful guidelines for calibration are provided in Appendix A of this part.

\2\ If the side burner, or more commonly one half of the side burner, fails to ignite quickly, adjust the position of the igniter, bearing in mind that propane is heavier than air. The best burner behavior test assessment is done against an inert surface (to spread the gas as it would during an actual test).

(ix) Gas flow rate. Use CP grade LP propane gas (nominally 99% to 100% propane). Each burner has a specific propane gas flow rate set with its respective, calibrated flowmeter. The gas flow rate to the top burner is 12.9 liters per minute ('L/min') 0.1 L/min at a pressure of 101.5 kPa (standard atmospheric pressure) and a temperature of 22.3 [deg]C. The gas flow rate to the side burner is 6.6 0.05 L/min at a pressure of 101.5 kPa (standard atmospheric pressure) and a temperature of 22

3 [deg]C. For the flowmeters supplied with the burner assembly, the black float setting for the top burner is expected to be in the 85 mm to 95 mm range. For the side burner, the expected range for the black float is 115 mm to 125 mm. The total heat release rate of the burners is 27 kW.

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Deleted: The top burner arm shall have a pair of moveable 1 cylindrical counterweights that are used, as described below, to adjust 1 the downward force on the stand-off foot.

Comment: The flow control system shall be able to maintain a preset flow rate and duration to a nominal tolerance.

Deleted: The gas flow 1 shall be set using a rotameter type of flowmeter, with a 150 mm scale, 1 calibrated for propane. When calibrating the flowmeter, take into 1 account that the flow resistance of the burner holes causes a finite 1 pressure increase in the flowmeter above ambient. (If a calibration at 1 one atmosphere is provided by the manufacturer, the flowmeter reading, 1 at the internal pressure existing in the meter, required to get the 1 flow rates listed in this paragraph must be corrected, typically by the 1 square root of the absolute pressure ratio. This calls for measuring 1 the actual pressure in the flow meters when set near the correct flow 1 values. A value roughly in the range of 1 kPa to 3 kPa -5 in to 15 in 1 of water--can be expected.)

Comment: Requiring a certain grade of propane will make the lab's work easier, rather than requiring them to test the grade of gas to ensure compliance with the details of the test.

Deleted: with a known net heat of 1 combustion of 46.5 0.5 MJ/kg

(b) Conditioning. Remove the specimens from any packaging prior to conditioning. Specimens shall be conditioned in air at a temperature greater than 18 [deg]C (65 [deg]F) and a relative humidity less than 55 percent for at least 48 continuous hours prior to test. Specimens shall be supported in a manner to permit free movement of air around them during conditioning.

(c) Test preparation. (1) General. The test cell must have a balanced air make-up system that allows for even flow of air throughout test sequence.

(2) Specimen. Remove the test specimen from the conditioning room immediately before it is to be tested. The test should begin no more than five (5) minutes after the test specimen has been removed from the conditioning room. If the test cannot be initiated within the prescribed five (5) minutes, the test specimen shall be returned to the conditioning room until it can be tested within the five minute period. Be sure the bed frame is approximately centered on the catch surface. Place the specimen on the bed frame. Carefully center them on the bed frame and on each other. The mattress shall be centered on top of the foundation (see Figure 1 of this part). However, in order to keep the heat flux exposure the same for the sides of the two components, if the mattress is 1 cm to 2 cm narrower than the foundation, the mattress shall be shifted so that the side to be exposed is in the same plane as the foundations. Refer to Figure 8 of this part. A product having an intended sleep surface on only one side shall be tested with the sleeping side up so that the sleeping surface is exposed to the propane burner.

(d) Burner flow rate/flow timer confirmation. Just prior to moving the burner adjacent to the test specimen, briefly ignite each burner at the same time, and check that the propane flow to that burner is set at the appropriate level on its flowmeter to provide the flows listed in paragraph (a) (5) (ix) of this section. Check that the timers for the burner exposures are set to 70 seconds for the top burner and 50 seconds for the side burner. For a new burner assembly, check the accuracy of the gas flow timers against a stop watch at these standard time settings. Set pilot flows to a level that will not cause them to impinge on sample surfaces. All of these reviews shall be performed before the sample is removed from conditioning and set up for testing.

(e) Location of the gas burners. Place the burner heads so that they are within 300 mm (1 ft) of the mid-length of the mattress. The general layout for the room configuration is shown in Figure 2 of this part. For a quilted mattress top the stand-off foot pad must alight on a high, flat area between dimples or quilting thread runs. The same is to be true for the side burner if that surface is quilted. If a specimen design presents a conflict in placement such that both burners cannot be placed between local depressions in the surface, the top burner shall be placed at the highest flat surface.

(f) Burner set-up. The burners shall be placed in relation to the mattress and foundation surfaces in the manner shown in Figure 9 of this part, i.e., at the nominal spacings shown there and with the burner tubes nominally parallel \3\ to the mattress surfaces on which they impinge. Since the heat flux levels seen by the test specimen surfaces depend on burner spacing, as well as gas flow rate, care must be taken with the set-up process.

\3\ The top burner will tend to be tangential to the mattress

Deleted: Horizontal air flow at a ¶ distance of 0.5 m (20 in) on all sides of the test specimen at the ¶ mattress top height shall be < = 0.5 m/s. If there is any visual ¶ evidence that the burner flames are being shifted around during their ¶ exposure durations, the burner regions must be enclosed on two or more ¶ sides by at least a triple layer of screen wire. The screen(s) for the ¶ top burner shall sit on the mattress top but must be far enough away ¶ (typically 30 cm or more) so as not to interfere or interact with flame ¶ spread during the burner exposure. The screen for the side burner will ¶ require a separate support from below. All screens shall be removed at ¶ the end of the 70 second exposure interval.

Comment: We have found that even flow of air makes a significant difference in the test sequence. Air is a significant fuel for a fire and we have observed even minor air fluctuations can affect the fire sequence during a test.

Comment: There should be rules ensuring that conditioning is not "undone" as the product sits and waits to be tested.

Comment: See comment above regarding the importance of testing immediately after removed from the conditioning room.

surface at the burner mid-length; this orientation will not necessarily be parallel to the overall average mattress surface orientation nor will it necessarily be horizontal. This is a result of the shape of the mattress top surface.

(g) Burner alignment procedure. (1) Preparation. Complete the following before starting the alignment procedure:

(i) Check that the pivot point for the mattress top burner feed tube and the two metal plates around it are clean and well-lubricated so as to allow smooth, free movement.

(ii) Set the two burners such that the 5[deg] out-of-plane angling of the flame jets makes the jets on the two burners point slightly toward each other.

(iii) Check the burner stand-off feet for straightness and perpendicularity between foot pad and support rod and to see that they are clean of residue from a previous test.

(iv) Have at hand the following items to assist in burner set-up: the jig, shown in Figure 10 of this part, for setting the stand-off feet at their proper distances from the front of the burner tube; a 3 mm thick piece of flat stock (any material) to assist in checking the parallelness of the burners to the mattress surfaces; and a 24 gage stainless steel sheet metal platen that is 30 mm (12 in) wide, 610 mm (24 in) long and has a sharp, precise 90[deg] bend 355 mm (14 in) from one 30 mm wide end.

(2) Alignment. (i) Place the burner assembly adjacent to the test specimen. Place the sheet metal platen on the mattress with the shorter side on top. The location shall be within 30 cm (1 ft) of the longitudinal center of the mattress. The intended location of the stand-off foot of the top burner shall not be in a dimple or crease caused by the quilting of the mattress top. Press the platen laterally inward from the edge of the mattress so that its side makes contact with either the top and bottom tape edge or the vertical side of the mattress. \4\ Use a 20 cm (8 in) strip of duct tape (platen to mattress top) to hold the platen firmly inward in this position.

Comment: The plate will depress the quilt panel of a plush or ultra-plush mattress product and when the plate is removed, the burner will then be closer to the mattress than the rule requires.

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\4\ Mattresses having a convex side are treated separately since the platen cannot be placed in the above manner. Use the platen only to set the top burner parallelness. Set the in/out distance of the top burner to the specification in the paragraph (g)(2)(iii). Set the side burner so that it is approximately (visually) parallel to the flat side surface of the foundation below the mattress/foundation crevice once its foot is in contact with the materials in the crevice area. The burner will not be vertical in this case. If the foundation side is also non-flat, set the side burner vertical (3 mm, as above) using a bubble level as a reference. The side surface convexities will then bring the bowed out sections of the specimen closer to the burner tube than the stand-off foot.

(ii) With both burner arms horizontal (pinned in this position), fully retract the stand-off feet of both burners and, if necessary, the pilot tubes as well \5\ (Neither is to protrude past the front face of

the burner tubes at this point.) Move the burner assembly forward (perpendicular to the mattress) until the vertical burner lightly contacts the sheet metal platen. Adjust the height of the vertical burner on its vertical support column so as to center the tube on the crevice between the mattress and the foundation. (This holds also for pillow top mattress tops, i.e., ignore the crevice between the pillow top and the main body of the mattress.) \6\ Adjust the height of the horizontal burner until it sits lightly on top of the sheet metal platen. Its burner arm should then be horizontal.

\5\ The pilot tubes can normally be left with their ends just behind the plane of the front of the burner tube. This way they will not interfere with positioning of the tube but their flame will readily ignite the burner tubes.

\6\ For tests of the mattress alone, set the side burner mid-height equal to the lower tape edge of the mattress.

(iii) Move the horizontal burner in/out (loosen the thumb screw near the pivot point) until the outer end of the burner tube is 13 mm to 19 mm (\1/2\ in to \3/4\ in) from the corner bend in the platen (this is facilitated by putting a pair of lines on the top of the platen 13 mm and 19 mm from the bend and parallel to it). Tighten the thumb screw.

(iv) Make the horizontal burner parallel to the top of the platen (within 3 mm, \1/8\ in over the burner tube length) by bending the copper tube section

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appropriately. Note: After the platen is removed in paragraph (g) (2) (vii), the burner tube may not be horizontal; this is normal. For mattress/foundation combinations having nominally flat, vertical sides, the similar adjustment for the vertical burner is intended to make that burner parallel to the sides and vertical. Variations in the shape of mattresses and foundations can cause the platen section on the side to be non-flat and/or non-vertical. If the platen is flat and vertical, make the vertical burner parallel to the side of the platen (< plus - minus > 3 mm) by bending its copper tube section as needed. If not, make the side burner parallel to the mattress/foundation sides by the best visual estimate after the platen has been removed.

(v) Move the burner assembly perpendicularly back away from the mattress about 30 cm (1 ft). Set the two stand-off feet to their respective distances using the jig designed for this purpose. Install the jig fully onto the burner tube (on the same side of the tube as the stand-off foot), with its side edges parallel to the burner feed arm, at about the position where one end of the foot will be. Loosen the set screw and slide the foot out to the point where it is flush with the bottom end of the jig. Tighten the set screw. Make sure the long axis of the foot is parallel to the burner tube. It is essential to use the correct side of the spacer jig with each burner. Double check this. The jig must be clearly marked.

Comment: The weight set out in Section (vi) is not representative of bed clothes. The nominal pressure distribution of the average adult is 0.3 psi.

Deleted: (vi) Set the downward force of the horizontal burner. Remove the 1 retainer pin near the pivot. While holding the burner feed arm 1 horizontal using a spring scale 7\ hooked onto the thumbscrew holding 1 the stand-off foot, move the small and/or large weights on the feed 1 tube appropriately so that the spring scale reads 170 g to 225 g (6 oz 1 to 8 oz).

\7\ An acceptable spring scale has a calibrated spring mounted within a holder and hooks on each end.

(vii) Remove the sheet metal platen (and tape holding it).

(viii) Hold the horizontal burner up while sliding the burner assembly forward until its stand-off foot just touches the mattress and/or the foundation \8\, then release the horizontal burner. The outer end of the burner tube should extend at least 6 mm to 12 mm (\1/4\ in to \1/2\ in) out beyond the uppermost corner/edge of the mattress so that the burner flames will hit the tape edge. (For a pillow top mattress, this means the outer edge of the pillow top portion and the distance may then be greater than 6 mm to 12 mm.) If this is not the case, move the burner assembly (perpendicular to the mattress side) -- not the horizontal burner alone -- until it is. Finally, move the vertical burner tube until its stand-off foot just touches the side of the mattress and/or the foundation. (Use the set screw near the vertical burner pivot.)

\8\ The foot should depress the surface it first contacts by no more than 1 mm to 2 mm. This is best seen up close, not from the rear of the burner assembly. However, if a protruding tape edge is the first item contacted, compress it until the foot is in the plane of the mattress/foundation vertical sides. The intent here is that the burner be spaced a fixed distance from the vertical mattress/foundation sides, not from an incidental protrusion. Similarly, if there is a wide crevice in this area which would allow the foot to move inward and thereby place the burners too close to the vertical mattress/foundation sides, it will be necessary to use the spacer jig (rather than the stand-off foot) above or below this crevice to set the proper burner spacing. Compress the mattress/foundation surface 1 mm to 2 mm when using the jig for this purpose.

(ix) Make sure all thumbscrews are adequately tightened. Care must be taken, once this set-up is achieved, to avoid bumping the burner assembly or disturbing the flexible lines that bring propane to it.

(xi) Proceed with the test (see Test Procedure in paragraph (h) of this section and Appendix B of this part).

(h) Running the test. (1) Charge the hose line to be used for fire suppression with water.

(2) Ignite the pilot lights on both burners and make sure they are small enough as to not heat the test specimen surfaces significantly.

(3) With the calorimetry system fully operational, after instrument

Comment: According to our experience, it is possible to eliminate any and all turbulence during a test sequence.

Deleted: (x) If there is any indication of flow disturbances in the test facility which cause the burner flames or pilot flames to move around, place screens around the burners so as to minimize these disturbances \9\. These screens (and any holders) must be far enough away from the burners (about 30 cm or more for the top, less for the side) so that they do not interact with the flames growing on the specimen surfaces. For the top surface burner, at least a triple layer of window screen approximately 30 cm high sitting vertically on the mattress top (Figure 9 of this part) has proved satisfactory. For the side burner at least a triple layer of screen approximately 15 cm wide, formed into a square-bottom U-shape and held from below the burner has proved satisfactory. Individual laboratories will have to experiment with the best arrangement for suppressing flow disturbances in their facility.

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Comment: See above regarding turbulence and airflow.

Deleted: \9\ The goal here is to keep the burner flames impinging on a fixed area of the specimen surface rather than wandering back and forth over a larger area.

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Comment: We are concerned with a passing reference to a clear safety step. It does not appear that this Rule addresses all of the "safety" issues broadly and generally with respect to this test method, so this one statement regarding charging a hose with [2]

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zeroes and spans, start the video lights and video camera and data logging systems two minutes before burner ignition (or, if not using video, take a picture of the setup).

(4) Start the burner exposure by starting gas flow to the burner. Also start a 30 minute timer of the test duration. If not using video, one photo must be taken within the first 45 seconds of starting the burners.

Deleted: activating power to the burner & timers

(5) When the burners go out (after 70 seconds for the longer exposure), carefully lift the top burner tube away from the specimen surface, producing as little as possible disturbance to the specimen. Remove the burner assembly from the specimen area to facilitate the video camera view of the full side of the specimen. In the case of the room-based configurations, remove the burner assembly from the room to protect it.

Deleted: Remove all screens.

(i) Video recording/photographs. Place a video or still frame camera so as to have (when the lens is zoomed out) just slightly more than a full-length view of the side of the test specimen being ignited, including a view of the flame impingement area while the burner assembly is present. The camera

shall include a measure of elapsed time to the nearest 1 second for video and 1 minute for still frame within its recorded field of view (preferably built-in to the camera). For the room-based configuration, the required full-length view of the sample may require an appropriately placed window, sealed with heat resistant glass, in one of the room walls. Place the camera at a height just sufficient to give a view of the top of the specimen while remaining under any smoke layer that may develop in the room. The specimen shall be brightly lit so that the image does not lose detail to over-exposed flames. This will require a pair or more of 1 kW photo flood lights illuminating the viewed side of the specimen. The lights may need to shine into the room from the outside via sealed windows.

Comment: The only measurements are mJ and HRR.

Deleted: The view must also include the catch pan so that it is clear whether any melt pool fire in this pan participates significantly in the growth of fire on the test specimen.

(j) Cessation of test. (1) The heat release rate shall be recorded and video/photographs taken until either 30 minutes has elapsed since the start of the burner exposure or a fire develops of such size as to require suppression for the safety of the facility.

(2) Note the time and nature of any unusual behavior that is not fully within the view of the video camera. This is most easily done by narration to a camcorder.

(3) Run the heat release rate system and datalogger until the fire has been

[[Page 2500]]

fully out for several minutes to allow the system zero to be recorded.

Sec. 1633.8 Findings.

(a) General. In order to issue a flammability standard under the FFA, the FFA requires the Commission to make certain findings and to include these in the regulation, 15 U.S.C. 1193(j)(2). These findings are discussed in this section.

(b) Voluntary standards. No findings concerning compliance with and adequacy of a voluntary standard are necessary because no relevant voluntary standard addressing the risk of injury that is addressed by this regulation has been adopted and implemented.

(c) Relationship of benefits to costs. The Commission estimates the

potential total lifetime benefits of a mattress that complies with this standard to range from \$62 to \$74 per mattress (based on a 10 year mattress life and a 3% discount rate). The Commission estimates total resource costs of the standard to range from \$13 to \$44 per mattress. This yields net benefits of \$18 to \$62 per mattress. The Commission estimates that aggregate lifetime benefits associated with all mattresses produced the first year the standard becomes effective range from \$1,560 to \$1,880 million, and that aggregate resource costs associated with these mattresses range from \$320 to \$1,110 million, yielding net benefits of about \$450 to \$1,560 million. Accordingly, the Commission finds that the benefits from the regulation bear a reasonable relationship to its costs.

(d) Least burdensome requirement. The Commission considered the following alternatives: Alternative maximum peak heat release rate and test duration, alternative total heat released in the first 10 minutes of the test, mandatory production testing, a longer effective date, taking no action, relying on a voluntary standard, and requiring labeling alone (without any performance requirements). The alternatives of taking no action, relying on a voluntary standard (if one existed) requiring labeling alone are unlikely to adequately reduce the risk. Requiring a criterion of 25 MJ total heat release during the first 10 minutes of the test instead of 15 MJ would likely reduce the estimated benefits (deaths and injuries reduced) without having much effect on costs. Both options of increasing the duration of the test from 30 minutes to 60 minutes and decreasing the peak rate of heat release from 200 kW to 150 kW would likely increase costs significantly without substantial increase in benefits. Requiring production testing would also likely increase costs. Therefore, the Commission finds that an open flame standard for mattresses with the testing requirements and criteria that are specified in the Commission rule is the least burdensome requirement that would prevent or adequately reduce the risk of injury for which the regulation is being promulgated.

Sec. 1633.9 Glossary of terms.

(a) Absorbent pad. Pad used on top of mattress. Designed to absorb moisture/body fluids 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 Figure 11 of this part).

(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 Figure 11).

(g) Convertible sofa. An upholstered sofa that converts into an adult sized bed. Mattress unfolds out and up from under the seat cushioning (see Figure 11).

(h) 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 Figure 11).

(i) 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.

(j) 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 Figure 11).

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

(l) 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 Figure 11).

(m) 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.

(n) 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 mattress and rises to form a double or two single beds (see Figure 11).

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

(p) Mattress foundation. This is a ticking covered structure used to support a mattress or sleep surface. The structure may include constructed frames, foam, box springs or other materials used alone or in combination.

(q) Murphy Bed. A style of sleep system where the mattress and foundation are fastened to the wall and provide a means to retract or rotate the bed assembly into the wall to release more floor area for other uses.

(r) 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.

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

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

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

(v) Roll-away-bed. Portable bed which has frame that folds with the mattress for compact storage.

(w) Sleep lounge. Upholstered seating section is mounted on a frame. May have bolster pillows along the wall as backrests or may have attached headrests (see Figure 11).

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

(y) 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 Figure 11).

(z) Sofa lounge--(includes glideouts). Upholstered seating section is mounted on springs and in a 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 Figure 11).

(aa) Studio couch. Consists of upholstered seating section on upholstered foundation. Many types convert to twin beds (see Figure 11).

(bb) Studio divan. Twin size upholstered seating section with foundation is mounted on metal bed frame. Has no arms or backrest, and sleeps one (see Figure 11).

(cc) Trundle bed. A low bed which is rolled under a larger bed. In some lines,

[[Page 2501]]

the lower bed springs up to form a double or two single beds as in a high riser (see Figure 11).

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

(ee) 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 Figure 11).

(ff) Flip or sleeper chair. Chair that unfolds to be used for sleeping, typically has several connecting fabric covered, solid foam core segments.

Subpart B--Rules and Requirements

Sec. 1633.10 Definitions.

(a) Standard means the Standard for the Flammability (Open -Flame) of Mattresses and Foundations (16 CFR part 1633, subpart A).

(b) The definition of terms set forth in Sec. 1633.2 of the standard shall also apply to this subpart.

Sec. 1633.11 Records.

(a) Test and manufacturing records --General. Every manufacturer (including importers) or other person initially introducing into commerce mattresses or mattress and foundation sets subject to the standard, irrespective of whether guarantees are issued relative thereto, shall maintain the following records:

(1) Test results and details of each test performed by or for that manufacturer (including failures, but not including those tests for products that manufacturer never commercialized or produced for sale), whether for prototype, confirmation, or production, in accordance with Sec. 1633.7. Details shall include:

Location of test facility, type of test room, test room conditions, prototype or production identification number, and test data including the peak rate of heat release, total heat release in first 10 minutes, a graphic depiction of the peak rate of heat release and total heat release over time. These records shall include the name and signature of person conducting the test, the date of the test, and 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. For confirmation tests, the identification number must be that of the prototype tested.

(2) Video and/or a minimum of eight photographs of the testing of each mattress or mattress and foundation set, in accordance with Sec. 1633.4 (one taken before the test starts, one taken within 45 seconds of the start of the test, and the remaining six taken at five minute intervals, starting at 5 minutes and ending at 30 minutes), with the prototype identification number or production lot identification number

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of the mattress or mattress foundation set, date and time of test, and name and location of testing facility clearly displayed.

(b) Prototype records. In addition to the records specified in paragraph (a) of this section, the following records related to prototype testing shall be maintained (corporations with multiple manufacturing facilities as wholly owned entities or subsidiaries relying on the prototype pooling provision of this Rule are permitted to maintain a single set of centralized records):

(1) Unique identification number for the qualified prototype and a list of the unique identification numbers of each prototype based on the qualified prototype.

(2) A detailed description of all materials, components, and methods of construction for each prototype mattress or prototype mattress and foundation set. Such description shall include at a minimum, the specifications of all materials and components, and name and location of each material and component supplier.

(3) A list of which models and production lots of mattresses or mattress and foundation sets are represented by each prototype identification number.

(4) Where a prototype is not required to be tested before sale, pursuant to Sec. 1633.4(b), the prototype identification number of the qualified prototype on which the mattress to be offered for sale is based.

(5) Identification, composition, and details of the application of any flame retardant treatments and/or inherently flame resistant fibers or other materials employed in mattress components.

(c) Pooling confirmation test records. With respect to pooling confirmation testing, records shall be maintained to show:

(1) The prototype identification number assigned by the original prototype manufacturer.

(2) Name and location of the prototype manufacturer.

(3) Copy of prototype test records, and records required by paragraph (b) (2) of this section.

(4) A list of models of mattresses, and/or mattress and foundation sets, represented by the prototype.

(d) Quality assurance records. In addition to the records required by paragraph (a) of this section, the following quality assurance records shall be maintained:

(1) A written copy of the manufacturer's quality assurance procedures and all documents affiliated with that specific quality assurance procedure or program.

(2) Records of any production tests performed. Production test records must be maintained and shall include in addition to the requirements of paragraph (a) of this section, the identification number of the prototype associated with the specimen tested.

(3) For each prototype, the number of mattresses or mattress and foundation sets in each production lot based on that prototype.

(5) Component, material and assembly records. Every manufacturer conducting tests and/or technical evaluations of components and materials and/or methods of construction must maintain detailed records of such tests and evaluations.

(e) Record retention requirements. The records required under this section shall be maintained by the manufacturer (including importers) for as long as mattresses/foundations based on the prototype in question are in production and shall be retained for 3 years

Comment: Requiring a "sample" of each material for a prototype given the "system nature" of the FR approach would be onerous and overwhelming. If a barrier is used, and the CPSC wishes for the manufacturer to retain a sample of the barrier, that could be accomplished.

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Comment: Our experience with FR barriers are very similar to the contents of quilt packages in 1632 test regime in that anything under the barrier does not effect the potential for the product to fail the open flame test. We, therefore, expect prototype tests for large groups of products with different foams and fibers directly underneath the FR barrier. Moreover, at this time, we even have very little evidence, if any, that the tick that is used over the barrier has any significant impact on the potential compliance of the product (in other words, if the product is going to pass with one B tick, it is certain to pass with any other A or B tick). Accordingly, the provisions of this section and the provisions of 1633.4(b) are unnecessarily onerous and burdensome. We strongly urge the CPSC to reconsider the effect of this requirement and allow for less onerous proof that one product fits under a major prototype.

Deleted: , and, at a minimum, the manufacturing specifications and a description of the materials substituted and/or the size change, photographs or physical specimens of the substituted materials, and documentation based on objectively reasonable criteria that the change in any component, material, or method of construction will not cause the prototype to exceed the test criteria specified ... [3]

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Deleted: an assigned production lot identification number and

Deleted: (4) The duration of manufacture of the production lot, i.e., the start and end dates of production of that lot.

thereafter. Records shall be available upon the request of Commission staff.

Sec. 1633.12 Labeling.

(a) Each mattress, whether sold separately or as a mattress/foundation set subject to the standard shall bear a permanent, conspicuous, and legible label containing:

- (1) Name of the manufacturer;
- (2) Location of the manufacturer, including street address, city and state;
- (3) Month and year of manufacture;
- (4) Model identification;
- (5) Prototype identification number for the mattress; and
- (6) A certification that the mattress complies with this standard.

(b) 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.

(c) 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.

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Sec. 1633.13 Tests for guaranty purposes, compliance with this section, and one of a kind exemption.

(a) Tests for guaranty purposes. Reasonable and representative tests for the purpose of issuing a guaranty under section 8 of the Flammable Fabrics Act, 15 U.S.C. 1197, for mattresses or mattress and foundation sets subject to the standard shall be the tests performed to show compliance with the standard.

(b) 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 and foundation set which is not in compliance with the provisions under subpart B of this part.

(c) "One of a kind" exemption for physician prescribed mattresses. (1)(i) A mattress or mattress and foundation set 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 Sec. 1633.7 thereof: Provided, that the mattress or mattress and foundation set bears a permanent, conspicuous and legible label which states:

WARNING: This mattress or mattress and foundation set may be subject to a large fire if exposed to an open flame. It was manufactured in accordance with a physician's prescription and has not been tested under the Federal Standard for the Flammability

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(Open-Flame) of Mattresses and Foundation Sets (16 CFR part 1633).

(ii) Such labeling must be attached to the mattress or mattress and foundation set so as to remain on or affixed thereto for the useful life of the mattress or mattress and foundation set. 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 and foundation set exempted from testing under this paragraph shall, in lieu of the records required to be kept by Sec. 1633.10, retain a copy of the written prescription or other comparable written medical therapeutic specification for such mattress during a period of three years, measured from the date of manufacture.

(3) For purposes of this subpart the term physician shall mean a physician, chiropractor or osteopath licensed or otherwise permitted to practice by any State of the United States.

Subpart C--Interpretations and Policies

Sec. 1633.14 Policy clarification on renovation of mattresses.

(a) ↓
The purpose of this subpart 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 open-flame 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) ↓
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 open-flame 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 open-flame Mattress

Comment: See the comment above regarding Renovators. We believe Renovators should be equally required, as "Manufacturers" to follow and comply with the new rule.

Deleted: 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 (Open-Flame) of Mattresses § and Foundations in subpart A of this part, issued pursuant to the Act, § provides that, with certain exceptions, mattresses must be tested § according to a prescribed method. The standard does not exempt § renovation; nor does it specifically refer to renovation.

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Deleted: For purposes of this subpart, 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.

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Standard until an exemption is approved.

(g)

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Appendix A: Calibration of Propane Flowmeters

1. Once the assembly of the burner is completed and all the connecting points are checked for gas leakage, the most critical task is ensuring the exact flow rates of propane into the top and side burners, as described in the test protocol. The gas flow rates are specified at 12.9 Liters per minute (LPM) 0.1 LPM and 6.6 LPM 0.05 LPM for the top and side burners (Burners 1 and 2), respectively, at a pressure of 101 5 kiloPascal (kPa) (standard atmospheric pressure) and a temperature of 22 3[deg] Centigrade (C).

2. The most practical and accurate method of measuring and calibrating the flow rate of gases (including propane) is use of a mass flow meter or a diaphragm test meter (also called a dry test meter). A diaphragm test meter functions based on positive displacement of a fixed volume of gas per rotation and its reading is therefore independent of the type of the gas being used. The gas pressure and temperature, however, can have significant impact on the measurement of flow rate.

3. The gas pressure downstream of the rotameters that are installed in the control box of the burner assembly is maintained near atmospheric pressure (only a few millimeters of water above atmosphere). Therefore, the best location to place the diaphragm test meter for gas flow calibration is right downstream of the control box. The pressure at the propane tank must be set at 20 0.5 pounds per square inch gage (psig).

Calibration Procedure:

Install the diaphragm test meter (DTM) downstream of the control box in the line for the top burner. Check all connecting points for gas leakage. Open the main valve on the propane tank and set a pressure of 20 0.5 psig. Set the timers in the control box for 999 seconds (or the maximum range possible). Record the barometric pressure. Turn the "Burner 1" switch to ON and ignite the top burner. Allow the gas to flow for 2 -3 minutes until the DTM is stabilized. Record the pressure and temperature in the DTM. Use a stopwatch to record at least one minute worth of complete rotations while counting the number of rotations. \1\ Calculate the propane gas flow rate using the recorded time and number of rotations (total flow in that time). Use the pressure and temperature readings to convert to standard conditions. Repeat this measurement for two additional meter setting to allow for calibrating the flowmeter throughout the range of interest. Plot the flow versus meter

Comment: Rotameters should not be referred to as they are not an accurate method to control gas flow (the output varies with input pressures and barometric pressure) and the rule could become anachronistic as technology advances occur.

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reading, fit a best line (possibly quadratic) through these points to find the meter setting for a flow of 12.9 LPM at the above "standard" conditions. Repeat this procedure for "Burner 2" using three meter readings to find the setting that gives a flow rate of 6.6 LPM at the standard conditions. After completion of the calibration, re-set the timers to 70 and 50 seconds.

\1\ With a diaphragm test meter well -sized to this application, this should be more than five rotations. A one liter per rotation meter will require 10 to 15 rotations for the flow measurements and greater than the minimum of one minute recording time specified here.

Dated: December 22, 2004.

Todd Stevenson,
Secretary, Consumer Product Safety Commission.

List of Relevant Documents

1. Briefing memorandum from Margaret Neily, Project Manager, Directorate for Engineering Sciences, to the Commission, "Notice of Proposed Rulemaking for Mattress Flammability (Open Flame) and Options for Addressing Bedclothes Involvement in Mattress/Bedding Fires," November 1, 2004.
2. Memorandum from Allyson Tenney, ES, to Margaret Neily, Engineering Sciences, "Background and Technical Rationale for Draft Proposed Standard for Open Flame Mattress Flammability," October 29, 2004.
3. Memorandum from Linda Smith and David Miller, EPI, "Residential Fires Involving Mattresses and Bedding," October 2004.
4. Memorandum from Carolyn Meiers, ESHF, to Margaret Neily, Project Manager, "Criteria for Judging Effectiveness of Proposed Mattress Standard," October 14, 2004.
5. Memorandum from Carolyn Meiers, ESHF, to Margaret Neily, Project Manager, "Human Behavior in Fire," October 7, 2004.
6. Memorandum from Treye Thomas and Patricia Brundage, HS, "Qualitative Assessment of Potential Risk from the Use of Flame Retardant Chemicals in Mattresses," October 25, 2004.
7. Memorandum from Robert Franklin, EC, to Margaret L. Neily, ES, "Preliminary Environmental Assessment of a Draft Proposed Open - Flame Ignition Resistance Standard for Mattresses," October 21, 2004.
8. Memorandum from Soumaya Tohamy, EC, to Margaret Neily, Project Manager, "Preliminary Regulatory Analysis of a Draft Proposed Standard to Address Open Flame Ignitions of Mattresses," October 27, 2004.
9. Memorandum from Soumaya Tohamy, EC, to Margaret Neily, Project Manager, "Initial Regulatory Flexibility Analysis of a Draft Proposed Standard to Address Open Flame Ignitions of Mattresses," October 27, 2004.
10. Terrance R. Karels, EC, to Margaret L. Neily, ES, "Updated

Comment: We do not believe such comments are warranted. The standard should be more focused on the results of the test and not the precise step-by-step performance of the test.

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1. Starting point: AC power on (red knob out); propane pressure set to 20 psig at bottle; timers set to 70 s (top burner) and 50 s (side burner); flowmeters pre-set to values that give the requisite propane gas flow rates to each burner. Pilot tubes set just behind front surface of burners; pilot flow valves set for ca. 2 cm flames.
2. Position burner on test specimen and remove sheet metal platen.
[[Page 2514]]
3. Place screens around both burners.
4. Open pilot ball valves one at a time and ignite pilots with hand-held flame; adjust flame size if necessary being very careful to avoid a jet flame that could prematurely ignite the test specimen (Beware: after a long interval between tests the low pilot flow rate will require a long time to displace air in the line and achieve the steady-state flame size.)
5. Open both burner ball valves.
6. Start test exposure by simultaneously turning on both timers (timers will turn off burners at appropriate times).
7. Check/adjust propane flow rates (DO THIS ESSENTIAL TASK IMMEDIATELY. Experience shows the flow will not remain the same from test-to-test in spite of fixed valve positions so adjustment is essential.)
8. After burners are

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Mattress Market Information,' ' October 5, 2004.

11 Memorandum from Linda Smith EPI, ``Involvement of Bedclothes in Residential Mattress Fires,' ' Ma y 2004.

12. Terrance R. Karels, EC, to Margaret L. Neily, ES, ``Bedding Market Information,' ' October 5, 2004.

13. Memorandum from Allyson Tenney, ES, to Margaret Neily, Engineering Sciences, ``Bedclothes Flammability,' ' October 29, 2004.

14. Memorandum from Martha A. Kosh, OS, to ES, ``Standard to Address Open Flame Ignition of Mattresses/Bedding; ANPR,' ' List of comments on CF 02-1, December 13, 2001.

15. Memorandum from Martha A. Kosh, OS, to ES, ``Standard to Address Open Flame Ignition of Mattresses/Bedding; ANPR (Revised),' ' List of comments on CF 02 -1, September 27, 2004.

16. National Research Council (2000). Toxicological Risks of Selected Flame-Retardant Chemicals (Washington, DC, National Academy Press).

[FR Doc. 05-416 Filed 1-12-05; 8:45 am]

BILLING CODE 6355-01-P

(iv) Burner stand-off. The burner stand-off on each burner shall consist of a collar fixed by a set screw onto the inlet tube of the burner head (Figure 5 of this part). The collar shall hold a 3 mm diameter stainless steel rod having a 12.7 mm by 51 mm by (2-2.5 mm) thick (0.5 in by 2 in by (0.08-0.10) in thick) stainless steel pad welded on its end with its face (and long axis) parallel to the T head of the burner. The foot pad shall be displaced about 10 mm to 12 mm from the longitudinal centerline of the burner head so that it does not rest on the test specimen in an area of peak heat flux. A short section (9.5 mm outer diameter ("OD"), about 80 mm long; 3/8 in OD, about 3.2 in long) of copper tubing shall be placed in the inlet gas line just before the burner to facilitate making the burner nominally parallel to the test specimen surface (by a procedure described in this paragraph). The copper tube on the top surface burner must be protected from excessive heat and surface oxidation by wrapping it with a suitable layer of high temperature insulation. Both copper tubes are to be bent by hand in the burner alignment process. They must be replaced if they become work-hardened or crimped in any way. The gas inlet lines (12.7 mm OD stainless steel tubing; 0.50 in) serve as arms leading back to the pivot points and beyond, as shown in Figure 6 of this part. The length to the pivot for the top burner shall be approximately 1000 mm (40 in).

We are concerned with a passing reference to a clear safety step. It does not appear that this Rule addresses all of the "safety" issues broadly and generally with respect to this test method, so this one statement regarding charging a hose with water seems out of place and dangerous given all of the other various safety steps any lab would have to undertake and consider. Either cover the safety issues in specificity and detail or make a broad statement that requires the lab to undertake appropriate safety and suppression steps. We believe the appropriate approach is for the CPSC to require the lab or tester to adhere to all health and safety protocols when carrying out these tests but not attempt to list all of them in the standard.

, and, at a minimum, the manufacturing specifications and a description of the materials substituted and/or the size change, photographs or physical specimens of the substituted materials, and documentation based on objectively reasonable criteria that the change in any component, material, or method of construction will not cause the prototype to exceed the test criteria specified in Sec. 1633.3(b).

Appendix B: Burner Operation Sequence

1. Starting point: AC power on (red knob out); propane pressure set to 20 psig at bottle; timers set to 70 s (top burner) and 50 s (side burner); flowmeters pre-set to values that give the requisite propane gas flow rates to each burner. Pilot tubes set just behind front surface of burners; pilot flow valves set for ca. 2 cm flames.
2. Position burner on test specimen and remove sheet metal platen.

[[Page 2514]]

3. Place screens around both burners.
4. Open pilot ball valves one at a time and ignite pilots with hand-held flame; adjust flame size if necessary being very careful to avoid a jet flame that could prematurely ignite the test specimen (Beware: after a long interval between tests the low pilot flow rate will require a long time to displace air in the line and achieve the steady-state flame size.)

5. Open both burner ball valves.
6. Start test exposure by simultaneously turning on power to both timers (timers will turn off burners at appropriate times).
7. Check/adjust propane flow rates (**DO THIS ESSENTIAL TASK IMMEDIATELY**. Experience shows the flow will not remain the same from test-to-test in spite of fixed valve positions so adjustment is essential.)
8. After burners are out:
 - a. Lift top burner and back assembly away from specimen.
 - b. Turn off power to both timers.
 - c. Remove screens.
 - d. Turn off pilots at their ball valves.

Stevenson, Todd A.

From: MMurray@Sealy.com
Sent: Tuesday, March 29, 2005 6:12 PM
To: Stevenson, Todd A.
Subject: [FR Doc: 05-00416];[Page 2469-2514]; Flammable Fabrics Act: Mattresses and mattress and foundation sets; flammability (open flame) standard



Sealy's Mattress Attachment I Sealy
NPR 1633 Comm... Comments to...

Please find attached Sealy's comments to proposed 16 CFR 1633.

We are sending a copy of these comments to the OMB at the address provided within the proposed rule.

If you have any questions, please call me at (336) 861-3699 or e-mail me at mmurray@sealy.com.

Thank you for considering our comments

Michael Quinlan Murray
Vice President - Legal Counsel
Sealy Mattress Company

(See attached file: Sealy's Mattress NPR 1633 Comments.doc) (See attached file: Attachment I Sealy Comments to Mattress NPR.doc)

Before The U.S. Consumer Product Safety Commission

March 29, 2005
cpsc-os@cpsc.gov
4330 East-West Highway
Bethesda, MD 20814

In re:

**Mattress NPR;
Standard for the Flammability (open Flame) of Mattress and Mattress/Foundation Sets;
Proposed Rules, 70 Fed. Reg. 2470 (Jan. 13, 2005)**

Submission Of Written Comments:

**Bob McKinnon
Frank Land**

McKinnon-Land-Moran, LLC
Charlotte, North Carolina (USA)

On behalf of McKinnon Land Moran, LLC, Basofil Fibers, LLC and McKinnon Land, LLC we wish to provide the following written comments regarding the notice of proposed rulemaking that the U.S. Consumer Product safety Commission (the Commission) has published at 70 Fed. Reg. 2470 (Jan. 13, 2005) to address open-flame ignitions of mattresses and mattress foundations.

1. **Our Companies Support the Product Performance Criteria and Test Method Proposed in Draft 1633.**

We fully support total implementation of the notice of proposed rulemaking that the U.S. Consumer Product safety Commission (the Commission) has published at 70 Fed. Reg. 2470 (Jan. 13, 2005) to address open-flame ignitions of mattresses and mattress foundations as written because it will help substantially reduce residential fire deaths and injuries as well as property damage. Further, the standard is based upon good science and research completed by the National Institute of Standards and Technology (NIST), which was sponsored by the Sleep Products Safety Commission (SPSC).

Our companies have assisted mattress companies and FR component manufacturers in a large number of full-scale independent laboratory tests. **REQUIREMENTS OF THE PRODUCT PERFORMANCE CRITERIA and TEST METHOD PROPOSED in the DRAFT 1633 STANDARD HAVE AND CAN BE CONTINUALLY AND EASILY MET.** Products tested have consisted of low, middle and high-end market mattress and box springs sets. The peak heat release of mattress sets tested scored 45 kW and below, while an intentionally unprotected mattress/box spring set exceeded 1100 kW.

As both an FR fiber supplier and research and development company we have validated that there is more than ample supply of fiber and processing capacity to provide mattress manufacturers what is needed for the entire United States market.

Fiber producers and processing companies have worked diligently, spending millions of dollars in research and development during the past several years to support industry and California and a proposed national standard. This has resulted in the creation of numerous FR barrier/ticking solutions for small business and others, which are cost effective, non-toxic and environmentally safe for all product levels.

The supply side of the industry would be tremendously harmed if delays occur. Suppliers have stepped forward to meet the new market needs. Scale up for raw materials and finished products have already begun. Expansions are planned and other products are in progress. We are all prepared now to move forward.

WE KNOW OF NO REASON REQUIREMENTS OF THE PRODUCT PERFORMANCE CRITERIA and TEST METHOD PROPOSED in the DRAFT 1633 STANDARD CANNOT BE IMPLEMENTED AS WRITTEN IN THE IMMEDIATE FUTURE.

2. Company Description

A. McKinnon-Land, LLC

McKinnon-Land, LLC acquired the intellectual property for the Alessandra yarn and fabric technology from Land Fabrics in February 2002. Land Fabrics, under the ownership of Frank Land had been involved in research and development of flame resistant interiors products for over twenty years.

Alessandra® yarns and fabrics are a revolutionary new solution to provide flame resistant properties to the mattress and upholstery industries. Never before has a fabric been so resistant to heat and flame while retaining the qualities expected of a quality mattress ticking or interliner fabrics.

Alessandra's® unique and patented design begins with the dual sheath, dual core yarn spinning technology. The dual core is comprised of fine glass and nylon filaments and then wrapped with a Basofil®/modacrylic fiber blend to form the base system. This base system is then wrapped with a second sheath of polyester fiber. It provides the FR performance, while the second sheath offers durability, dye-ability and cost effectiveness.

When woven into a fabric, these exceptional yarns form a grid-lattice system. The fine denier glass and nylon continuous filaments form the grid. The Basofil® fiber stabilizes the carbon char, which forms upon flame exposure, creating a lattice filling the grid and preventing flame from penetrating to the underlying fill materials in the mattress or furniture. These products have been tested by Air Quality Sciences an independent laboratory in Atlanta, Georgia. They have found to be volatile organic chemical free to product off gassing and scored well below industrial limits required by EPA for industrial use.

In addition, as a result of the blended fibers inherently flame resistant polymer chemistry and manufacturing process the fiber products produced are inert thereby making this FR solution non-toxic and environmentally safe.

B. McKinnon-Land-Moran, LLC

In June 2002 McKinnon-Land-Moran, LLC was formed specifically to purchase the assets inclusive of the worldwide intellectual property of the Basofil fibers business unit of BASF Corporation. The sale of this business by BASF was part of a more extensive restructuring program involving their decision to exit the industrial fiber area.

C. Basofil Fibers, LLC

BASF had focused their attention on the following markets during their period of ownership of the Basofil business:

- FR Industrial Workwear
- Fire Service Turnout Gear
- Aircraft Seat Barriers
- High Heat Filtration
- Non-Toxic to VOC Off Gassing
- Environmentally Safe due to Polymer Chemistry Production and Process

During the course of time in which they developed the knowledge and intellectual property of Basofil Fibers they invested more than one hundred million dollars. Although the fiber performed exceptionally well in the markets intended, the demand did not fuel the engine.

In 1998 research engineers with Basofil began working to create solutions for FR needs in the home furnishings industry. This work and development paid off as nonwoven products were created as a result of experimentation and research with other manufacturers. Also, about this time, Alan Handermann, Basofil's Director of R&D and Frank Land began working together. It was at this point that Basofil was included in the formulation for Alessandra as well as in many patented nonwoven products being commercialized.

Basofil® fiber is an inherently heat and flame resistant synthetic fiber. Its capability to char rather than burn coupled with its soft, supple hand makes it a superior fiber for open-flame protection, especially in textile home furnishings. Basofil fiber is made from melamine resin, the same durable material used in kitchen countertops. The unique cross-linked chemical structure resists shrinkage creating a thermally stable fiber. The fiber's unique advantages include:

- White in color
- Soft, supple and comfortable to the touch
- Does not melt or drip; chars in place
- FR chemical coating or treatment-free
- Non-allergenic and odor free
- Non-yellowing; resistant to ultra violet light
- Endothermic

3. Ownership and Management

McKinnon-Land-Moran, LLC, Basofil Fibers, LLC and McKinnon-Land, LLC are primarily owned by Bob McKinnon and Frank Land.

Mr. McKinnon is CEO and Chairman of all three companies. His experience includes over forty years in Home Furnishings Textiles and Furniture. From 1978 to 1995 he served as President, CEO of Valdese Weavers and from 1995 to May 2000 he served as President, CEO of Century Furniture as well as CV Industries the parent company of both Century and Valdese.

As a member of the American Textile Manufacturers Institute (ATMI) he chaired the upholstery fabric committee for two years.

He later served as a member of the Board of Directors of the American Furniture Manufacturers Association (AFMA) and concurrently served as a board member of UFAC.

During the time he worked in these positions he gained considerable insight into the challenges faced by both industry and government regarding flame resistant textiles and home furnishings.

In addition to Mr. McKinnon, Mr. Land has worked in research and development in home interiors FR protection for over twenty years. His most notable invention is the patented technology for the Alessandra yarn and fabric system.

4. FR Product Background Information

Over the last few years, many fiber manufacturers and raw material suppliers to the home furnishing industry have developed and commercialized cost effective products to meet the flame resistant standards being proposed by the governing bodies tasked to ensure that safe products are manufactured for the consuming public. These new flame resistant products have been developed to meet a myriad of requirements, including those of the manufacturers of the home furnishings, so that their inclusion can be implemented in the most seamless way possible. The “drop-in” ability of many of the FR components commercialized to date require few changes to be made by the manufacturer of home furnishing items. The key commercialization criteria which FR barrier suppliers are targeting are listed below:

A. FR Barrier Commercialization Criteria

- 1. Pass FR test method**
 - a. Reliable performance
 1. By mattress style, price point and fuel load
- 2. Preferred FR barrier properties**
 - a. White in color so that it does not affect fashion or look
 - b. Breathable to ensure existing comfort features
 - c. Soft, supple, flexible “hand” or “feel”
- 3. Vertical manufacturing process for FR barriers.**
 - a. Raw material fiber availability
 1. Contracts for fiber supply
 - b. High degree of quality assurance
 - c. Tight manufacturing product specifications
 - d. Fiber blending and processing equipment in place
 1. Availability and delivery of processing equipment
 - e. Financial strength and supply chain
- 4. Vertical manufacturing process for mattress/box spring sets**
 - a. Drop in FR product application in mattress manufacturing
 1. Ideally replacing existing non-FR materials in

- aa. Quilted border panels
 - bb. Quilted top and bottom panels
 - b. Drop-in FR product application in box spring manufacturing
 - 1. Ideally replacing existing non-FR materials in
 - aa. Quilted border panels
- 5. **Durability of FR performance for mattress manufacturer's warrantee**
 - a. FR performance should be good for the life of the mattress as specified
 - 1. Pass mattress industry's "rollator" durability test
- 6. **Product availability to satisfy market need**
 - a. Multiple FR barrier suppliers and product brand types
 - 1. Ability to provide required volumes in
 - aa. California
 - bb. All USA – national program
- 7. **Systems approach in utilization of barrier products**
 - a. Cost of FR barrier products is key
 - b. Use of woven, knitted & non-woven FR barriers to provide look and comfort desired
 - c. Impact to manufacturing cost by incorporating FR barrier

Many in the home furnishing industry agree with all of the above criteria and have indicated that the consumers' desire for fashionable, comfortable products must be maintained. The flame resistant features that the new standards will require must be incorporated in a manner, which is transparent to the consumer. In other words, the comfort and beauty, which the American consumer has come to expect, must continue without requiring the manufacturers of these products to be burdened with cumbersome and expensive changes to their manufacturing processes. Besides all of this, the manufacturers of these FR home furnishings have made it clear that they find it difficult to pass on added costs to their furniture retailers and ultimately to consumers.

5. **BASOFIL® FIBER**

A. **Product Description**

Basofil® fiber, based upon melamine chemistry, is an inherently heat and flame resistant (up to 750°F) synthetic fiber that does not shrink or melt when in contact with flame. Developed and patented by BASF AG, Basofil® fibers are currently being sold into fireblocking, fire service, aircraft seat covers, filtration, insulation and workwear applications to enhance heat and flame resistant properties of the finished goods. The degree of flame resistance required by the application dictates the amount of Basofil® fiber required in the product.

Basofil® fiber's unique cross-section and variable diameter increases the insulation and filtration efficiencies of the product. Basofil® fiber consists of staple fibers that have variable length and diameter. This fiber is white in color and is dyeable. Basofil®'s processing and physical properties are similar to natural fibers such as cotton and wool and they can be woven into fabric using existing technology and equipment. Basofil® fiber is environmentally safe and nontoxic and is an outstanding blending fiber when used in conjunction with other synthetic and natural fibers.

Basofil® fiber can be converted into nonwoven products such as highloft, needlepunch, thermal point bonded, spunlace, stitchbonded and other forms. Nonwoven product forms are used in numerous applications and as fiberfill for pillows, comforters, mattress pads and other top-of-the-bed applications. Basofil® fiber can also be woven in blends with other fibers for mattress ticking, barrier/interliner products and decorative fabrics. Through the use of a combination of highloft and barrier/interliner woven products, a mattress, for example, can be encased in a flame resistant barrier permitting the manufacturer to meet California's AB 603 and the proposed CPSC regulations with little additional cost. Similarly, with the use of Basofil® fiber in fiberfill and woven product forms, bedding products can be economically manufactured to meet new flame resistance standards.

B. Current Manufacturing Capacity

The existing manufacturing facility for Basofil® fiber is located in Enka, North Carolina. It has a nameplate capacity of 3.5 million lbs per year and a demonstrated capacity of 2.7 million lbs per year. MLM has identified several production bottlenecks, which can bring the production facility up to its nameplate capacity, for an estimated capital expenditure of approximately \$200,000. This production unit was brought on-stream in 1996. It is important to note that 10 percent of Basofil by weight is required to convert commodity fiber blends to comply with CPSC's 1633 Draft Standard. This means that 3.5 million pounds of Basofil has proven potential to yield 35 million pounds of compliant FR fiber blends suitable for meeting and passing CPSC's Proposed 1633 Draft Standard.

It is anticipated by the Company that production capacity will need to be increased significantly due to the additional demand generated by the new "FR" regulations impacting bed sets, home furnishings and top-of-the-bed products. The Company projects that each additional 4.5 million lbs/yr unit of fiber capacity will cost approximately \$12 million to install and startup.

C. Raw Material

Continual contact is maintained with raw materials suppliers and there are ample amounts available to fulfill the needs of Basofil Fibers. It is important to note that these products are not stockpiled simply awaiting orders. Plans must be made based upon real purchase orders and contracts so that delivery might be made in a seamless manner.

6. Financial Impact should delay in Implementation Occur

A delay in implementation would be extremely costly to Basofil Fibers and create significant hardship.

The capital production equipment designed to manufacture Basofil Fibers is specially made. Although we can and will begin the process of expansion at the appropriate time and complete the first planned project on schedule, it is not in our financial best interest to allow equipment to remain idle once in place. At the same time many millions of dollars can be tied up in raw materials, labor and invested capital should we begin building production lines that we do not need to operate. Due to the nature of this manufacturing process our equipment must remain in an operational state continually. In other words we cannot just turn it on and off.

7. Validation Studies

For many years Land Fabrics, McKinnon-Land, LLC, BASF, Basofil Fibers, LLC and McKinnon-Land-Moran, LLC have provided leadership and conducted extensive research in the home products FR area. Thousands of indicative tests have been conducted and monitored in the BASF laboratory in the Basofil facility and have provided guidance for our scientist to move forward with full-scale independent laboratory work. Govmark, Omega Point and Underwriters Laboratory have burned hundreds of mattresses and box springs utilizing various component products specified by our team and provided by many barrier/ticking suppliers. In fact these indicative and full-scale tests have been witnessed by and encouraged by many key US and foreign bedding manufacturers.

Prior to the announcement of the test protocol for CPSC's Draft 1633 Standard we were proactive in assisting mattress manufacturers test their products using California's TB 603 test method. Those results have had a positive impact and assisted in developing the science needed to move forward.

Since the pass/fail criteria for CPSC's 1633 Standard was announced January 13, 2005 we have proactively assisted many members of industry test dozens of mattress sets in an effort to validate the effectiveness of barrier products we have developed and patented.

Not surprising to us nor many members of industry, CPSC's 1633 requirements can be met when barrier products are properly applied in accordance with known fire safety specifications. The independent tests repeatedly revealed that the peak heat release levels reached were between 22 kW and 45 kW over the course of 30 minutes of NIST dual burner product testing which is well below the allowable 200 kW. In approximately 10% of the tests conducted we found that results did not achieve CPSC's 1633 requirements. However in each of these instances we discovered

that certain FR safety applications were not followed. Barrier and ticking products are much like rifles. It is imprudent to hunt an elephant with a B-B gun and expect desired results. The correct barrier properly applied will definitely accomplish what is expected.

8. Expected Costs

It would be unrealistic to expect that an increase in cost not occur when fire safety is provided for mattresses and box springs. Many have speculated, and our manufacturing sources advise us that depending upon the selling price of the mattress and the type of protective products used, the new barrier will cost an additional \$12 - \$20 for a queen sized product. We do not know the value of the currently used products that will be displaced by the FR products, therefore no net increase was calculated.

Safety upgrading does cost money. Ask the automobile industry about seat belts and air bags. These added costs are not questioned today because we are not and should not place a miniscule price tag on saving lives.

Medical costs have gone up significantly. Whether it be for inoculations to prevent diseases or for other medications, which cure them, the importance of life supercedes a minor cost increase.

9. Analysis

Change can be and often is agonizing for industry.

However, there is no doubt that hundreds and most likely thousands of lives can and will be positively affected by the implementation and adherence to the CPSC's 1633 Draft Standard.

Fire safety is provided first through scientific research and then through careful implementation of the products provided by suppliers.

Due to polymer chemistry advances in the ability to mass produce inert non-toxic fibers the products and environment are safe.

There will be a zero economic impact to small business due to the wide breath and variety of FR barrier products being offered to the market.

In the world market free enterprise levels the playing field and rewards the low cost providers of good quality, high performance products.

Stevenson, Todd A.

From: Frank Land [frank.land@basofil.com]

Sent: Tuesday, March 29, 2005 4:37 PM

To: Stevenson, Todd A.

Cc: frank.land@basofil.com; 'Bob McKinnon'

Subject: McKinnon Land Moran LLC Written Comments - Mattress NPR - Standard for Flammability (Open Flame) of Mattresses and Mattress Foundation Sets; Proposed Rules, 70 Fed. Reg. 2470 (Jan 13, 2005)

Attention:

Office of the Secretary
Consumer Product safety Commission
Washington, DC 20207

Attached please find McKinnon Land Moran, LLC, Written Comments - Mattress NPR - Standard for Flammability (Open Flame) of Mattresses and Mattress Foundation Sets; Proposed Rules, 70 Fed. Reg. 2470 (Jan 13, 2005).

If you have any questions please contact us at (704) 423-2244.

Sincerely,

Frank Land

3/30/2005

March 29, 2005

Mattress 533

Office of the Secretary
Consumer Product Safety Commission
Washington, DC 20590

Email: cpsc-os@cpsc.gov

Re: Mattress NPR
Standard for the Flammability (Open Flame) of Mattresses and
Mattress/Foundation Sets; Notice of Proposed Rulemaking

**COMMENTS SUBMITTED BY
RECREATION VEHICLE INDUSTRY ASSOCIATION**

I. Background

These comments are submitted by the Recreation Vehicle Industry Association, Inc. ("RVIA") in response to the Consumer Product Safety Commission's ("CPSC" or "Commission") Notice of Proposed Rulemaking ("NPR") that seeks to amend Title 16 of the Code of Federal Regulations by adding a new part 1633 entitled, "Standard for the Flammability (Open-Flame) of Mattresses and Mattress and Foundation Sets." This NPR was published in the Federal Register on January 13, 2005 (70 FR 2470, et seq).

RVIA is a national trade association that represents the manufacturers and component part suppliers of recreation vehicles ("RVs"), which include motorhomes, travel trailers, fifth wheel trailers, folding camping trailers, multi-purpose trailers and truck campers, as well as conversion vehicle manufacturers who upfit vans, pickup trucks and sport utility vehicles ("CVs"). RVIA's members produce over 95% of all RVs and approximately 90% of all CVs sold in the United States. At present, RVIA represents 38 motorhome manufacturers, with an estimated aggregate annual production of 71,800 motorhome units in 2004. There are 51 members of RVIA that manufacture travel trailer, fifth wheel trailer, folding camping trailer, multi-purpose trailer and/or truck camper RVs, with an estimated aggregate annual production of over 298,300 such units in 2004. There are 35 CV members of RVIA, with an estimated aggregate annual production of approximately 42,000 CV units in 2004 (this figure includes altered vehicles and van conversions). Finally, RVIA also represents over 250 supplier members that provide equipment, component parts and services to the RV industry.

The following comments address RVIA's concern that the proposed regulation will apply to fixtures in RVs. RVs are unique products that combine elements of vehicles with temporary accommodations for camping and other recreational purposes. They are not homes and, in fact, most states prohibit their use as permanent residences.

The text and discussions in the NPR suggest that the intent of the regulation is to address fires in homes that involve sleeping surface products, with a particular emphasis on fires in bedrooms. However, the scope of the proposed rule and the definitions contained therein will apparently and inadvertently encompass the temporary sleeping fixtures found in vehicles used for camping and other recreational purposes. Many of these temporary sleeping fixtures are of a multi-purpose design, such as convertible dinette booths, fold-down small sofas or retractable bunk beds, that use a fabric-encased foam material and are custom assembled by RV manufacturers. RVIA contends that these fixtures are not "mattresses or mattress and foundation sets" as contemplated by the proposed rule, that RV manufacturers custom assembling such fixtures are not "mattress manufacturers" as contemplated by the proposed rule, and that both should be explicitly excluded therefrom.

II. It Appears That The Proposed Rule Does Not Intend To Regulate RVs

The text and discussions in the NPR appear to indicate that the CPSC did not consider and was not contemplating the extension of this proposed rule to recreation vehicles. In fact, the apparent intent is that this rule is directed toward mattresses used in homes and places of permanent residence, in contemplation of home fires in general and home bedroom fires in particular. The fact that, as it is currently proposed, the rule will also extend to recreation vehicles appears to be an inadvertent and unintended consequence.

In the Background section of the NPR introducing the proposed rule, the Commission writes that, "[a] burning mattress generally provides the biggest fuel load in a typical *bedroom fire*," and "[r]esearch has shown that the mattress, foundation and bedclothes operate as a system in *bedroom fires*." 70 FR 2470 (emphasis added). Another issue of concern discussed in this same section notes that flashover from mattress fires "accounts for nearly all of the fatalities that occur outside the room where the fire originated ... [and a] mattress that reduces the likelihood of reaching flashover could significantly reduce deaths and injuries associated with *bedroom fires*." *Id.* (emphasis added). The plain meaning of this language indicates that the intended object of this rule is to address fires in bedrooms of permanent residential multi-room structures.

The proposed rule appears to be modeled after California's open flame mattress standard, Technical Bulletin 603 (2004) (70 FR 2471). At the time this regulation was being considered, RVIA and many of its member manufacturers conducted several conversations with Mr. John McCormack, the Manager of Research and Development for the California Bureau of Home Furnishings and Thermal Insulation and the individual responsible for this regulatory effort.¹ Mr. McCormack recognized that RVs were not the intended target of the regulation and explicitly determined that sleeper mattresses sold or manufactured exclusively for use in recreational vehicles, towed travel trailers and other motorized craft sold in California would not be subject to the requirements of California Technical Bulletin 603.

¹ Mr. McCormack's full address and contact information is as follows: John McCormack, Manager, Research and Development, California Bureau of Home Furnishings and Thermal Insulation, 34 Orange Grove Avenue, North Highlands, CA 95660-5595; Phone - (916) 574-2057; Email - john_mccormack@dca.ca.gov

RVs combine elements of vehicles with temporary accommodations for camping, travel and other recreational purposes. They are not homes and, in fact, most states prohibit their use as permanent residences. Moreover, the federal government recognizes that RVs are not residences. Housing regulations promulgated and enforced by the Department of Housing and Urban Development ("HUD") do not apply to RVs. In fact, HUD's Manufactured Home Procedural and Enforcement Regulations explicitly exclude recreational vehicles.²

The NFPA 1192 Standard on Recreational Vehicles, defines a recreation vehicle as: "A vehicular-type unit primarily designed to provide temporary living quarters for recreational, camping, travel or seasonal use that either has its own motive power or is mounted on or towed by another vehicle."³ Some RVs are motorized vehicles unto themselves. These include: Type A Motorhomes, the largest RVs usually built on bus-type chassis; Type C Motorhomes, typically smaller and built on straight truck or cut-away van chassis with a cab-over sleeping compartment above the driver position; and Type B Motorhomes, the smallest motorized RVs built on extended full-size van chassis with raised roofs. The majority of RVs are not motorized and are towed by a passenger car, SUV or pickup truck. These include: Travel Trailers, the most familiar type of camping vehicle capable of being drawn by most vehicles; Fifth-wheel trailers, larger units that are designed for towing by pick-up trucks with a bed-mounted hitch pin; Folding Camping Trailers, the smallest RVs with collapsible canvass sides and fold-out sleeping platforms; and Multi-Purpose Trailers, which are hybrid units that combine some living facilities with a separate compartment for transporting horses, motorcycles or all terrain vehicles to the recreation site. Lastly, RVs include Truck Campers, which can be mounted onto and integrally attached to pick-up trucks for recreational travel.

The proposed rule is unambiguously directed at alleviating potential fire damage and injury to persons in home bedroom fires, and to preventing the spread of such fires to adjoining rooms of permanent home structures. No RV is designed or intended to be a home. Therefore, RVIA urges the CPSC to adopt language explicitly excluding all recreation vehicles and their contents from this proposed rule.

III. The Proposed Rule Does Not Recognize Issues Unique To RVs

The stated purpose of the proposed rule is to establish requirements "that all mattresses and mattress and foundation sets must meet before sale or introduction into commerce." 70 FR 2494, at § 1633.1(a). Mattresses are defined broadly to include any material intended or

² See 24 CFR § 3282.8(g). This section further defines a RV as "a vehicle which is: (1) Built on a single chassis; (2) 400 Square feet or less when measured at the largest horizontal projections; (3) Self-propelled or permanently towable by a light duty truck; and (4) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use."

³ NFPA 1192 Standard on Recreational Vehicles, 2005 Edition, § 3.3.50. This standard is published by the National Fire Protection Association (NFPA) and approved as an American National Standard in accordance with the requirements of the American National Standards Institute (ANSI). This document establishes safety standards for RVs with regard to fuel systems and equipment, plumbing systems, and fire and life safety provisions. RVs are also required to meet the applicable provisions of the National Electric Code.

promoted for sleeping upon including, but not limited to mattresses that are a part of upholstered furniture. Id. at § 1633.2(a).

Most larger RVs contain traditional queen-sized beds with mattresses and foundations. These are certainly within the purview intended by the proposed rule (though their location within an RV rather than a home apparently is not). Such traditional mattresses, which are purchased by RV manufacturers from mattress manufacturers, will presumably comply with the proposed rule once it is in effect and be so certified by their respective suppliers. RVIA's concern, however, is for the many other fixtures unique to RV interiors that may be considered mattresses under the very broad definition of that term as proposed in the rule. In addition, there is further concern that RV manufacturers may even improperly be considered mattress manufacturers under this rule.

Because RVs are limited in their interior space, many fixtures serve multiple functions. Most RVs have dinette booths for eating which consist of a wall-mounted table flanked by two, two-person bench seats. These seats and seat backs are typically made out of upholstery-covered foam material. Many of these dinette sets can be converted into a sleeping surface by unlatching the table from the wall brackets, dropping it down into a track and re-arranging the loose seat and seat-back cushions to cover the entire dinette area. A sleeping bag is typically laid over this surface. Other RVs have small sofas that are either slept on as is, or can be widened by pulling the horizontal seat forward and dropping down the seat back to form a sleeping surface. In the small Type B Motorhomes, the driver and front passenger seats can be laid fully back to serve as sleeping positions. In certain Type C Motorhome configurations, there is a compartment area open above the driver position. When the RV is set up at its destination, a moveable rigid piece can be slid into position and upholstered foam cushions can be laid out to form a bunk-like sleeping surface. Finally, in Multi-Purpose Trailers, upholstered foam-covered bunks in the storage area can be unlatched from the wall once the equipment has been moved outside and folded down to provide additional sleeping surfaces. Many RV manufacturers purchase foam and fabric from suppliers and custom make these cushions themselves by cutting the foam to fit the particular configuration of the RV model and upholstering the cut sections with fabric appropriate to the interior color scheme.

These common RV features lead to difficult questions for RV manufacturers, and for the CPSC as well, with regard to the proposed rule. In the dinette set example detailed above, for instance: Are the seat back cushions a "mattress" as defined by the proposed rule? If the dinette set could be used as a sleeping surface, but is exclusively used for eating and is never converted to such use by the RV owner, is it still a "mattress" in the eyes of the proposed rule? If two differently configured RVs have identical dinette sets made of identical upholstery and foam materials and one can convert to a sleeping surface while the other cannot, do both, only one or neither have to meet the "mattress" requirements of the proposed rule? Similarly, with regard to small RV sofas, if two sofas are constructed with identical materials and both can be slept upon, but only one has the ability to be widened by dropping the back, do both, only one or neither have to meet the "mattress" requirements of the proposed rule?

Still further difficult questions are raised, but not clearly answered, by the proposed rule regarding the definition of "mattress manufacturer." A "manufacturer" is defined to mean "an individual plant or factory at which mattresses and/or mattress and foundation sets are manufactured or assembled" 70 FR 2495, at § 1633.2(i). Does this definition render an RV manufacturer that assembles sofa cushions, dinette seats, etc. a mattress manufacturer? If an RV manufacturer buys traditional mattresses, pre-assembled RV sofas, ready-made dinette cushions, pads for fold-down bunks, or any similar product from a third-party supplier, installs them into a RV and then delivers the completed unit to a RV dealer for sale to a consumer, who then does the proposed rule consider to be the "manufacturer" that is introducing the "mattress" into commerce?

The proposed rule does not anticipate any of these questions, nor does it provide any guidance to RV manufacturers on how, or even whether, they are to comply. Because the rule is not really intended to regulate RVs, such question examples as those discussed herein are merely the tip of the iceberg: many more are sure to arise if RVs continue to be included in the rule. Therefore, RVIA again urges the CPSC to adopt language explicitly excluding all recreation vehicles and their contents from this proposed rule.

IV. Consumers Are Protected Under National Fire Safety Standards For RVs

RVIA's member manufacturers produce over 95% of all RVs sold in the United States each year. As a condition of their membership in RVIA, manufacturers must self-certify that every unit they produce complies with the NFPA 1192 (ANSI) Standard noted above.

While RVIA does not itself certify compliance, it employs a full-time staff of six traveling inspectors who are all experts in the NFPA 1192 provisions. Every member manufacturer receives an unannounced inspection visit from an inspector at six to eight week intervals. During these visits, the inspectors conduct an audit of the units currently on the production line as well as finished units ready to ship, citing any violations of the Standard found and providing educational assistance to ensure that corrections are made. If repeat violations of the same infractions are discovered on subsequent inspection trips and the manufacturer fails or refuses to take steps to ensure the correction of these deficiencies, the manufacturer will be expelled from RVIA.

Unlike the proposed rule, the fire safety provisions addressed in NFPA 1192 are specifically tailored to the unique circumstances of RV products. For example, all RVs have limited interior space and multiple egresses for evacuation in the event of fire. NFPA 1192 specifies a minimum number of such egresses and multiple paths to exit from each sleeping area, as well as requirements for listed smoke alarms, carbon monoxide detectors and fire extinguishers.⁴

Whereas the objective of the proposed rule is to prevent bedroom mattress fires from consuming the room and spreading to other areas of the house, NFPA 1192 takes into account

⁴ Id. at § 6.2 (Recreational Vehicle Exit Facilities), § 6.3 (Fire Detection Equipment) and § 6.4 (Other Considerations).

the particular circumstances of RVs and therefore both emphasizes and facilitates rapid evacuation from the unit. This is a much more realistic and product-specific objective for fire safety in RVs than the broader goals of the proposed rule.

V. Motorized RVs Are Regulated by Department of Transportation Standards

RV motorhomes are motor vehicles and, as such, subject to the Federal Motor Vehicle Safety Standards ("FMVSS") promulgated and administered by the Department of Transportation's National Highway Traffic Safety Administration ("NHTSA").

Among the FMVSS with which motorized RVs must comply is No. 302; Flammability of Interior Materials (49 CFR § 571.302). The stated scope of this standard is to specify "burn resistance requirements for materials used in the occupant compartments of motor vehicles." *Id.* at § 571.302(S1.). The direct-flame burn test required by this standard applies to "seat cushions, seat backs, seat belts, headlining, convertible tops, arm rests, all trim panels including door, front, rear, and side panels, compartment shelves, head restraints, floor coverings, sun visors, curtains, shades, wheel housing covers, engine compartment covers, *mattress covers*, and any other interior materials" *Id.* at § 571.302(S4.1.) (emphasis added).

Because motorized RVs are regulated as vehicles, the FMVSS will pre-empt the proposed rule here at issue for such products. The concerns targeted by the proposed rule are already addressed by FMVSS No. 302. In practical reality, it is RVIA's understanding based on discussions with its member manufacturers that all RVs, both motorized and non-motorized, typically utilize materials that comply with FMVSS No. 302.

The introduction of the proposed rule and its application to RVs will lead to a confusing enforcement conundrum for manufacturers that produce both motorized and non-motorized RV units. For instance, if a motorhome and a travel trailer, produced by the same manufacturer, have virtually identical interior layouts, sleeping facilities and materials, the motorhome will be regulated by FMVSS No. 302 and the travel trailer will be regulated by the proposed rule. This is a burdensome and illogical approach to regulation.

RVIA suggests that if the Commission intends to include RVs under this proposed rule that the same goal can be accomplished by allowing RV manufacturers to comply with either the proposed rule or FMVSS No. 302. This would provide the consumer with the quality of fire protection the Commission is seeking without unduly burdening RV manufacturers.

VI. RV Manufacturers Are Primarily Small Businesses

With few exceptions, RV manufacturers are "small entities" as defined in the Small Business Administration's Small Business Size Regulations, 13 CFR §121.201 (2005). To the best of RVIA's knowledge, only one manufacturer has more than 1,000 employees, which is the limit prescribed by the SBA regulations. The smallest manufacturers employ less than 35 people.

While many of the larger manufacturers have one or more people on staff dedicated to technical compliance issues, the smaller ones do not. Consequently, any testing that would need to be done to comply with the proposed rule would require the involvement of costly third-party contractors. These contractors would not only be needed to conduct tests under the proposed rule, but also to conduct research on compliant materials and advise on changes in the RV manufacturing process.

The proposed rule requires that testing be done for each "prototype," which is defined as "a specific design of mattress and corresponding foundation, if any, which ... is the same in all material respects as, and serves as a model for, production units intended to be introduced into commerce" 70 FR 2495, at § 1633.2(j). This requirement would not be unduly burdensome for the traditional mattress manufacturers contemplated by the rule. But even the Commission itself has recognized that the costs of compliance with this rule "could be substantially higher for small mattress producers" 70 FR 2490. If this requirement is applied to RV manufacturers, given the numerous different fixtures they produce and/or install which arguably could be considered mattresses under this rule, as previously discussed, these small businesses could end up having to conduct many more tests than the traditional mattress manufacturers.

It is not economically practicable for small business RV manufacturers to comply with this proposed rule, nor is it equitable to impose a greater economic burden on RV manufacturers than on the traditional mattress manufacturers that are intended to be regulated by this rule.

Thank you for this opportunity to comment on the NPR.

Sincerely,

Robert J. Schmitt
Assistant General Counsel

Stevenson, Todd A.

From: Bob Schmitt [rschmitt@rvia.org]
Sent: Tuesday, March 29, 2005 5:34 PM
To: Stevenson, Todd A.
Subject: Mattress NPR -- Comments by the Recreation Vehicle Industry Association

Importance: High



2005 03-29 CPSC
Mattress NPR.d...

See attached comments to the above-captioned NPR.

<<2005 03-29 CPSC Mattress NPR.doc>>

Thank you,

Robert J. Schmitt
Assistant General Counsel
RVIA
(703) 620-6003 ext. 358

March 29, 2005

Office of the Secretary
Consumer Product Safety Commission
4330 East-West Highway
Bethesda, MD 20814

RE: Mattress NPR

Dear Sir or Madame:

The American Council of Independent Laboratories (ACIL), founded in 1937, is the national trade association representing independent scientific laboratory, testing, consulting, product certifying, and R&D firms; manufacturers' laboratories; and consultants and suppliers to the industry. ACIL defines an independent testing firm as a commercial entity engaged in analysis, testing, inspection, materials engineering, sampling, product certifying, research or development, and related consulting services for the public. An independent laboratory is not affiliated with any institution, company or trade group that might affect its ability to conduct investigations, render reports, or give professional counsel objectively and without bias.

ACIL's 250 member companies operate approximately 1,500 facilities across the U.S. and abroad. They range from the one-person specialty laboratory to multi-disciplined, international corporations employing thousands of analysts, risk management specialists, consultants, and support staff. All ACIL members are accredited for the scopes of testing they perform.

One of ACIL's technical sections is the Conformity Assessment Section (CAS). CAS's mission is to provide education and advocacy for firms engaged in testing certification or quality systems of testing in accordance with applicable domestic standards, international or foreign government industry safety and performance standards. ACIL and the CAS appreciate the opportunity to comment on the Standard for the Flammability (Open Flame) of Mattresses and Mattress/Foundation Sets and the Standard to Address Open Flame Ignition of Bedclothes; Proposed Rules. See 70 FR at 2470 (Jan 13, 2005).

As noted in the attached proposed amendment to the Proposed Rulemaking (see §16633.2 Definitions (r) and (s) and §1633.4 Prototype testing requirements (d),) ACIL strongly urges the CPSC to mandate the use of accredited laboratories to support the Commission's mission—to reduce deaths and injuries associated with mattress fires by limiting the size of the fire generated by a mattress or mattress and foundation set during a 30 minute test.

Commissioner Moore has noted that the tests required to properly implement this standard are complex and sophisticated and the competence of the laboratories performing these tests must be assured. Accreditation is the nationally and internationally recognized system to provide that assurance.

March 28, 2005

The independence of those conducting the tests is equally important. It is vital to consumer confidence that those assuring the conformance of the mattresses to the standard be free of any undue commercial, financial or other pressures that might influence their technical judgment.

We applaud the Commission for its initiative to ensure public health and safety in this important area and strongly urge you to consider these important amendments to the proposed rule.

Sincerely,

A handwritten signature in black ink, reading "Joan Walsh Cassidy". The signature is written in a cursive, flowing style.

Joan Walsh Cassidy, CAE
Executive Director

cc: Walter Vance, CSA International; Chair, ACIL Conformity Assessment Section
Leonard Frier, MET Laboratories; Vice Chair, ACIL Conformity Assessment
Section
Christine Briggs, NTS; ACIL Board Liaison, Conformity Assessment Section

J. Response to Comments on the ANPR

On October 11, 2001, the Commission published an ANPR in the **Federal Register**, 66 FR 51886. During the comment period, the Commission received sixteen written comments from businesses, associations and interested parties representing various segments of the mattress and bedding industries. After the close of the comment period, the Commission received a number of additional comments, including one from the California Bureau of Home Furnishings and Thermal Insulation urging the Commission to adopt California's TB 603 as a federal standard. Significant issues raised by all of these comments are discussed below. [14&15]

5. *Comment.* Two commenters recognize the sophistication and complexity of the test method used in California TB 603 and potentially in a federal standard. They suggest that CPSC explore laboratory accreditation programs to insure test labs are properly qualified to conduct this complex test.

Response. The interlaboratory study may identify laboratory practices, equipment, and other related factors that must be controlled to ensure consistent and accurate test results. The report and findings of the study will be available to the public; and appropriate guidance can be provided to interested laboratories. While accrediting test laboratories is not a CPSC function, the Commission supports industry and commercial laboratory development of such a program.

PART 1633—STANDARD FOR THE FLAMMABILITY (OPEN-FLAME) OF MATTRESSES and MATTRESS AND FOUNDATION SETS

Subpart A—The Standard

Sec.

- 1633.1 Purpose, scope and applicability.
- 1633.2 Definitions.
- 1633.3 General requirements.
- 1633.4 Prototype testing requirements.
- 1633.5 Prototype pooling and confirmation testing requirements.
- 1633.6 Quality assurance requirements.
- 1633.7 Mattress test procedure.
- 1633.8 Findings.
- 1633.9 Glossary of terms.

Subpart B—Rules and Regulations

- 1633.10 Definitions.
- 1633.11 Records.
- 1633.12 Labeling.
- 1633.13 Tests for guaranty purposes, compliance with this section, and "one of a kind" exemption.

Subpart C—Interpretations and Policies

- 1633.14 Policy clarification on renovation of mattresses.
 - Figure 1 to Part 1633—Test Assembly, Shown in Furniture Calorimeter (Configuration A)
 - Figure 2 to Part 1633—Test Arrangement in 3.05m Å~ 3.66m (10 ft Å~ 12 ft) Room (Configuration B)
 - Figure 3 to Part 1633—Details of Horizontal Burner Head
 - Figure 4 to Part 1633—Details of Vertical Burner Head
 - Figure 5 to Part 1633—Details of Burner Stand-off
 - Figure 6 to Part 1633—Burner Assembly Showing Arms and Pivots (Shoulder Screws), in Relation to, Portable Frame Allowing Burner Height Adjustment
 - Figure 7 to Part 1633—Elements of Propane Flow Control for Each Burner
 - Figure 8 to Part 1633—Jig for Setting Mattresses and Foundation Sides in Same Plane
 - Figure 9 to Part 1633—Burner Placements on Mattress/Foundation
 - Figure 10 to Part 1633—Jig for Setting Burners at Proper Distances from Mattress/Foundation
 - Figure 11 to Part 1633—Diagrams for Glossary of Terms
 - Appendix A to Part 1633—Calibration of Propane Flowmeters
 - Appendix B to Part 1633—Burner Operation Sequence

Authority: 15 U.S.C. 1193, 1194.

Subpart A—The Standard

§ 1633.1 Purpose, scope, and applicability.

(a) *Purpose.* This Part 1633 establishes flammability requirements that all mattress and mattress and foundation sets must meet before sale or introduction into commerce. The purpose of the standard is to reduce deaths and injuries associated with mattress fires by limiting the size of the fire generated by a mattress or mattress and foundation set during a thirty minute test.

(b) *Scope.* (1) All mattresses and all mattress and foundation sets, as defined in § 1633.2(a) and § 1633.2(b), of any size, manufactured or imported after [the effective date of this standard] are subject to the requirements of the standard.

(2) One-of-a-kind mattresses and foundations may be exempted from testing under this standard in accordance with § 1633.13(c).

(c) *Applicability.* The requirements of this part 1633 shall apply to each "manufacturer" (as that term is defined in § 1633.2(i)) of mattresses and/or mattress and foundation sets which are manufactured for sale in commerce.

§ 1633.2 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 purposes of this part 1633.

(a) *Mattress* means a resilient material or combination of materials enclosed by a ticking (used alone or in combination with other products) intended or promoted for sleeping upon.

(1) This term includes, but is not limited to, adult mattresses, youth mattresses, crib mattresses (including portable crib mattresses), bunk bed mattresses, futons, flip chairs without a permanent back or arms, sleeper chairs, and water beds or air mattresses if they contain upholstery material between the ticking and the mattress core. Mattresses used in or as part of upholstered furniture are also included; examples are convertible sofa bed mattresses, corner group mattresses, day bed mattresses, roll-away bed mattresses, high risers, and trundle bed mattresses. See § 1633.9 Glossary of terms, for definitions of these items.

(2) This term excludes mattress pads, mattress toppers (items with resilient filling, with or without ticking, intended to be used with or on top of a mattress), sleeping bags, pillows, liquid and gaseous filled tickings, such as water beds and air mattresses that contain no upholstery material between the ticking and the mattress core, upholstered furniture which does not contain a mattress, 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 § 1633.9 Glossary of terms, for definitions of these items.

(b) *Foundation* means a ticking covered structure used to support a mattress or sleep surface. The structure may include constructed frames, foam, box springs, or other materials, used alone or in combination.

(c) *Ticking* means the outermost layer of fabric or related material of a mattress or foundation. It does not include any other layers of fabric or related materials quilted together with, or otherwise attached to, the outermost layer of fabric or related material.

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

(e) *Edge seam* means the seam or border edge of a mattress or foundation that joins the top and/or bottom with the side panels.

(f) *Tape edge* means an edge seam made by using binding tape to encase and finish raw edges.

(g) *Binding tape* means a fabric strip used in the construction of some edge seams.

(h) *Seam thread* means the thread used to form stitches in construction features, seams, and tape edges.

(i) *Manufacturer* means an individual plant or factory at which mattresses and/or mattress and foundation sets are manufactured or assembled. For purposes of this Part 1633, an importer is considered a manufacturer.

(j) *Prototype* means a specific design of mattress and corresponding foundation, if any, which, except as permitted by § 1633.4(b), is the same in all material respects as, and serves as a model for, production units intended to be introduced into commerce.

(k) *Prototype pooling* means a cooperative arrangement whereby one or more manufacturers may rely on a prototype produced by a different manufacturer.

(l) *Production lot* means any quantity of finished mattresses or mattress and foundation sets that are produced in a production interval defined by the manufacturer, and are intended to replicate a specific prototype that complies with this part 1633.

(m) *Confirmation test* means a premarket test conducted by a manufacturer that is relying on a pooled prototype produced by another manufacturer. A confirmation test must be conducted in accordance with the procedures set forth in § 1633.7 to confirm that the manufacturer can produce a mattress and corresponding foundation, if any, that is identical to the prototype in all material respects.

(n) *Specimen* means a mattress and corresponding foundation, if any, tested under this part.

(o) *Twin size* means any mattress with the dimensions 38 inches (in) (96.5 centimeters (cm)) x 74.5 in. (189.2 cm), all dimensions may vary by $\frac{1}{2}$ in. (1.3 cm)

(p) *Qualified prototype* means a prototype that has been tested in accordance with § 1633.4(a) and meets the criteria stated in § 1633.3(b).

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

(r) Accredited Laboratory means a laboratory that has been accredited as competent to perform specific tests or specific types of tests in accordance with all elements of ISO/IEC Standard 17025 by an accreditation body that is recognized by the National Cooperation for Laboratory Accreditation (NACLA).

(s) Independent Laboratory means one that is able to demonstrate that it is impartial and that it and its personnel are free from any undue commercial, financial or other pressures that might influence their technical judgment. The third-party testing laboratory should not engage in any activities that may endanger the trust in its independence of judgment and integrity in relation to its testing activities. The third-party testing laboratory or its personnel cannot be the designer, manufacturer, supplier, installer, purchaser, owner, user nor maintainer of the item, material or products they test or calibrate nor the authorized representative of any of these parties.

§ 1633.3 General requirements.

(a) *Summary of test method.* The test method set forth in § 1633.7 measures the flammability (fire test response characteristics) of a mattress specimen by exposing the specimen to a specified flaming ignition source and allowing it to burn freely under well-ventilated, controlled environmental conditions. The flaming ignition source shall be a pair of propane burners. These burners impose differing fluxes for differing times on the top and sides of the specimen. During and after this exposure, measurements shall be made of the time-dependent heat release rate from the specimen, quantifying the energy generated by the fire. The rate of heat release must be measured by means of oxygen consumption calorimetry.

(b) *Test criteria.* When testing the mattress or mattress and foundation set in accordance with the test procedure set forth in § 1633.7, the specimen shall comply with both of the following criteria:

(1) The peak rate of heat release shall not exceed 200 kilowatts ("kW") at any time within the 30 minute test; and

(2) The total heat release shall not exceed 15 megajoules ("MJ") for the first 10 minutes of the test. In the interest of safety, the test operator should discontinue the test and record a failure if a fire develops to such a size as to require suppression for the safety of the facility.

(c) *Testing of mattress and corresponding foundation.* Mattresses to be offered for sale with a foundation shall be tested with that foundation. Mattresses to be offered for sale without a foundation shall be tested alone.

(d) *Compliance with this standard.* Each mattress or mattress and foundation set sold or introduced into commerce after [the effective date of this standard] shall meet the test criteria specified in paragraph (b) of this section and otherwise comply with all applicable requirements of this part 1633.

§ 1633.4 Prototype testing requirements.

(a) Except as otherwise provided in paragraph (b) of this section, each manufacturer shall cause three specimens of each prototype to be tested according to § 1633.7 and obtain passing test results according to § 1633.3(b) before selling or introducing into commerce any mattress or mattress and foundation set based on that prototype, unless the manufacturer complies with the prototype pooling and confirmation testing requirements in § 1633.5.

(b) Notwithstanding the requirements of paragraph (a) of this section, a manufacturer may sell or introduce into commerce a mattress or mattress and foundation set based on a prototype that has not been tested according to § 1633.3(b) if that prototype differs from a qualified prototype only with respect to:

(1) Mattress/foundation size (e.g., twin, queen, king);

(2) Ticking, unless the ticking of the qualified prototype has characteristics (such as chemical treatment or special fiber composition) designed to improve performance on the test prescribed in this part; and/or

(3) The manufacturer can demonstrate, on an objectively reasonable basis, that a change in any component, material, or method of construction will not cause the prototype to exceed the test criteria specified in § 1633.3(b).

(c) All tests must be conducted on specimens that are no smaller than a twin size, unless the largest size mattress or mattress and foundation set produced is smaller than a twin size, in which case the largest size must be tested.

(d) All tests conducted to establish compliance with this section shall be conducted by an accredited, independent laboratory.

(e)(1) If each of the three specimens meets both the criteria specified in § 1633.3(b), the prototype shall be qualified. If any one (1) specimen fails to meet the test criteria of § 1633.3(b), the prototype is not qualified.

(2) Any manufacturer may produce mattresses and foundations, if any, for sale in reliance on prototype tests performed before [the effective date of this Standard], provided that such tests were conducted in accordance with all requirements of this section and § 1633.7 and yielded passing results according to the test criteria of § 1633.3(b).

§ 1633.5 Prototype pooling and confirmation testing requirements.

(a) *Prototype pooling.* One or more manufacturers may rely on a prototype produced by another manufacturer provided that:

(1) The prototype meets the requirements of § 1633.4; and

(2) The mattresses or mattress and foundation sets being produced based on the prototype have components, materials, and methods of construction that are identical in all material respects to the prototype except as otherwise permitted by § 1633.4(b).

(b) *Confirmation testing.* Any manufacturer ("Manufacturer B") producing mattresses or mattress and foundation sets in reliance on a prototype produced by another manufacturer ("Manufacturer A") shall cause to be tested in accordance with § 1633.7 at least one (1) specimen produced by Manufacturer B of each prototype of Manufacturer A upon which said Manufacturer B is relying. The tested specimen must meet the criteria under § 1633.3(b) before Manufacturer B may sell or introduce any mattresses or mattress and foundation sets based on the pooled prototype.

(c) *Confirmation test failure.* (1) If the confirmation test specimen fails to meet the criteria of § 1633.3(b), the manufacturer thereof shall not sell any mattress or mattress and foundation set based on the same prototype until that manufacturer takes corrective measures, tests a new specimen, and the new specimen meets the criteria of § 1633.3(b).

(2) If a confirmation test specimen fails to meet the criteria of § 1633.3(b), the manufacturer thereof must notify the manufacturer of the prototype of the test failure.

§ 1633.6 Quality assurance requirements.

(a) *Quality assurance.* Each manufacturer shall implement a quality assurance program to ensure that mattresses and mattress and foundation sets manufactured for sale are identical in all material respects to the prototype on which they are based. At a minimum these procedures shall include:

(1) Controls, including incoming inspection procedures, of all mattress and mattress and foundation set components and materials to ensure that they are identical in all material respects to those used in the prototype;

(2) Designation of a production lot that is represented by the prototype; and

(3) Inspection of mattresses and mattress and foundation sets produced for sale sufficient to demonstrate that they are identical to the prototype in all material respects.

(b) *Production testing.* Manufacturers are encouraged to conduct, as part of the quality assurance program, random testing of mattresses and mattress and foundation sets being produced for sale according to the requirements of §§ 1633.3 and 1633.7.

(c) *Failure of mattresses produced for sale to meet flammability standard.* (1) *Sale of mattresses and foundations.* If any test performed for quality assurance yields results which indicate that any mattress or mattress and foundation set of a production lot does not meet the criteria of § 1633.3(b), or if a manufacturer obtains test results or other evidence that a component or material or construction/assembly process used could negatively affect the test performance of the mattress as set forth in § 1633.3(b), the manufacturer shall cease production and distribution in commerce of such mattresses and/or mattress and foundation sets until corrective action is taken.

(2) *Corrective actions.* A manufacturer must take corrective action when any mattress or mattress and foundation set is manufactured or imported for sale fails to meet the flammability test criteria set forth in § 1633.3(b).

Subpart B—Rules and Requirements

§ 1633.10 Definitions.

(a) *Standard* means the Standard for the Flammability (Open-Flame) of Mattresses and Foundations (16 CFR part 1633, subpart A).

(b) The definition of terms set forth in § 1633.2 of the standard shall also apply to this subpart.

§ 1633.11 Records.

(a) *Test and manufacturing records— General.* Every manufacturer (including importers) or other person initially introducing into commerce mattresses or mattress and foundation sets subject to the standard, irrespective of whether guarantees are issued relative thereto, shall maintain the following records:

(1) Test results and details of each test performed by or for that manufacturer (including failures), whether for prototype, confirmation, or production, in accordance with § 1633.7. Details shall include: Location of test facility, type of test room, test room conditions, prototype or production identification number, and test data including the peak rate of heat release, total heat release in first 10 minutes, a graphic depiction of the peak rate of heat release and total heat release over time. These records shall include the name and signature of person conducting the test, the date of the test, and 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. For confirmation tests, the identification number must be that of the prototype tested.

(2) Video and/or a minimum of eight photographs of the testing of each mattress or mattress and foundation set, in accordance with § 1633.4 (one taken before the test starts, one taken within 45 seconds of the start of the test, and the remaining six taken at five minute intervals, starting at 5 minutes and ending at 30 minutes), with the prototype identification number or production lot identification number of the mattress or mattress foundation set, date and time of test, and name and location of testing facility clearly displayed.

(b) *Prototype records.* In addition to the records specified in paragraph (a) of this section, the following records related to prototype testing shall be maintained:

(1) Unique identification number for the qualified prototype and a list of the unique identification numbers of each prototype based on the qualified prototype.

(2) A detailed description of all materials, components, and methods of construction for each prototype mattress or prototype mattress and foundation set. Such description shall include at a minimum, the specifications of all materials and components, name and location of each material and component supplier, and a physical sample of each material and component of the prototype.

(3) A list of which models and production lots of mattresses or mattress and foundation sets are represented by each prototype identification number.

(4) Where a prototype is not required to be tested before sale, pursuant to § 1633.4(b), the prototype identification number of the qualified prototype on which the mattress to be offered for sale is based, and, at a minimum, the manufacturing specifications and a description of the materials substituted and/or the size change, photographs or physical specimens of the substituted materials, and documentation based on objectively reasonable criteria that the change in any component, material, or method of construction will not cause the prototype to exceed the test criteria specified in § 1633.3(b).

(5) Identification, composition, and details of the application of any flame retardant treatments and/or inherently flame resistant fibers or other materials employed in mattress components.

(c) *Pooling confirmation test records.* With respect to pooling confirmation testing, records shall be maintained to show:

(1) The prototype identification number assigned by the original prototype manufacturer.

(2) Name and location of the prototype manufacturer.

(3) Copy of prototype test records, and records required by paragraph (b)(2) of this section.

(4) A list of models of mattresses, and/ or mattress and foundation sets, represented by the prototype.

(d) *Quality assurance records.* In addition to the records required by paragraph (a) of this section, the following quality assurance records shall be maintained:

(1) A written copy of the manufacturer's quality assurance procedures.

(2) Records of any production tests performed. Production test records must be maintained and shall include in addition to the requirements of paragraph (a) of this section, an assigned production lot identification number and the identification number of the prototype associated with the specimen tested.

(3) For each prototype, the number of mattresses or mattress and foundation sets in each production lot based on that prototype.

(4) The duration of manufacture of the production lot, *i.e.*, the start and end dates of production of that lot.

(5) Component, material and assembly records. Every manufacturer conducting tests and/or technical evaluations of components and materials and/or methods of construction must maintain detailed records of such tests and evaluations.

(e) *Record retention requirements.* The records required under this section shall be maintained by the manufacturer (including importers) for as long as mattresses/foundations based on the prototype in question are in production and shall be retained for 3 years thereafter. Records shall be available upon the request of Commission staff.

§ 1633.12 Labeling.

(a) Each mattress or mattress/ foundation set subject to the standard shall bear a permanent, conspicuous, and legible label containing:

(1) Name of the manufacturer;

(2) Location of the manufacturer, including street address, city and state;

(3) Month and year of manufacture;

(4) Model identification;

(5) Prototype identification number for the mattress; and

(6) A certification that the mattress complies with this standard.

(b) 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.

(c) 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.

Stevenson, Todd A.

From: Hutchcraft, Tom [thutchcraft@acil.org]
Sent: Tuesday, March 29, 2005 1:51 PM
To: Stevenson, Todd A.
Cc: walter.vance@csa-international.org; lfrier@metlabs.com; christine.briggs@ntscorp.com
Subject: Comments on Proposed Standard for the Flammability of Mattresses

Office of the Secretary, Consumer Product Safety Commission:

Attached are the American Council of Independent Laboratories (ACIL) comments on the proposed standard for the flammability of mattresses. Should you have any questions, please feel free to contact me at any time.

Thank you.

Tom Hutchcraft
Section Administrator
American Council of Independent Laboratories (ACIL)
Phone (202) 887-5872 Ext. 107

3/30/2005



North American Fire Testing Laboratories Consortium

1629 K Street, NW, Suite 400 • Washington, DC 20006 • Phone: 202.887.5872 • Fax: 202.887.0021 • www.naftl.org

March 29, 2005

Office of the Secretary
Consumer Product Safety Commission
Washington DC 20207-0001

Subject: Mattress NPR

Filed by e-mail to cpsc-os@cpsc.gov

Dear Sir or Madam:

The purpose of this letter is to comment on the notice of proposed rulemaking for a flammability standard to address open flame ignition of mattresses and mattress and foundation sets that appeared in Vol. 70 No. 9 of the Federal Register on January 13, 2005. This comment is submitted by the North American Fire Testing Laboratories Consortium (NAFTL).

NAFTL proposes that the Commission require that test results to demonstrate compliance with the proposed rule only be obtained by an independent accredited laboratory. The requirement to perform testing at a competent laboratory that does not have a potential conflict of interest is necessary to give the general public confidence that products indeed provide the level of safety that is intended by the proposed rule. There are several organizations that already provide accreditation services to fire testing laboratories and that could expand the scope of their accreditation to include the proposed mattress flammability test standard.

NAFTL is an organization of North American-based independent commercial laboratories engaged in fire testing or research. It provides a forum for the exchange of technical information, conducts studies, and develops industry consensus positions relating to the full range of fire tests.

NAFTL would like to thank the Commission for this opportunity to comment on the proposed rule.

Sincerely,

Marc L. Janssens, Ph.D.
Chairman of NAFTL

Stevenson, Todd A.

From: Marc L. Janssens [marc.janssens@swri.org]
Sent: Tuesday, March 29, 2005 4:06 PM
To: Stevenson, Todd A.
Subject: Mattress NPR

Dear Sir or Madam:

Attached please find a comment submitted by the North American Fire Testing Laboratories Consortium (NAFTL) on the notice of proposed rulemaking for a flammability standard to address open flame ignition of mattresses and mattress and foundation sets. Thank you for the opportunity to comment on the proposed rule.

Marc L. Janssens, Ph.D.
Director
Department of Fire Technology
Southwest Research Institute
6220 Culebra
San Antonio, TX 78238-5166
210-522-6655 (phone)
210-522-3377 (fax)
marc.janssens@swri.edu
<http://www.fire.swri.org>

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Nathan 536

March 29, 2005

Office of the Secretary
Consumer Product Safety Commission
Washington, DC 20207-0127

Dear Secretary:

We are writing to respectfully request that Consumer Product Safety Commission ("CPSC") extend for six months the time period for public comment in response to the Notice of Proposed Rulemaking ("NPRM") the CPSC issued on January 13, 2005, regarding its proposed Standard for the Flammability of Mattresses and Mattress/Foundation sets.

AH&LA is a 94-year-old dual membership association of state and city partner lodging associations throughout the United States with some 10,000 property members nationwide, representing more than 1.4 million guest rooms. The lodging industry employs more than two million people.

The NPRM poses several critical issues regarding the guidelines.

Additional time is necessary for our industry to fully gather pertinent information and fully respond to the CPSC. Anything short of six months would not allow for a full and accurate record of the implications of this rulemaking on the lodging industry.

In the 23 years since 1980, the lodging industry has made tremendous strides in fire safety and our members are proud of our record. The lodging industry has been, and continues to be, vigilant in preventing, stopping, and limiting fire and smoke incidents.

Lodging operations must meet increasingly rigorous building codes designed to eliminate and mitigate risks from fire and smoke. Through requirements such as hard-wired smoke detectors, sprinklers, flammability testing of walls and doors, our industry continues to lead the way in fire prevention.

Our efforts have not gone unnoticed. In November 1996, the NFPA commended AH&LA recognizing the extraordinary commitment, efforts and record of achievement by our industry for excellence in providing and promoting safety from fire to our guests.

In fact, the NFPA announced in 1996 that its annual study of U.S. fire losses showed such a dramatic drop in lodging industry fire losses that it would no longer include a separate entry for lodging. Rather, the NFPA began to include lodging industry in the

“other” category. This, according to the NFPA, was “a milestone in the dramatic and remarkable progress of fire safety in the lodging industry.” (NFPA Journal, July/August 1996, page 56)

NFPA recently reported statistics that show the lodging industry fires have decreased 63 percent since 1980. This success compares favorably to a decrease of 51 percent for all types of structures over that same time period.

In its notice, the CPSC rightly directs many of its comments to fire problems in residential use of unsafe upholstered furniture. Given the past success, and ongoing activity, with reducing fire incidents in the lodging industry, we strongly recommend the CPSC narrowly define the application of this regulation to private non-commercial residencies that are not likely to have sprinklers, smoke detectors nor meet current fire safety standards.

Given the success in fire safety of the lodging industry, we believe it unnecessary for any Federal regulations to direct our members to replace existing upholstered furniture either retroactively or before the items have been fully utilized. The effect on the lodging industry of such a regulatory initiative could be enormous. Every lodging establishment, no matter how small, provides beds to its guests. A CPSC rulemaking could impact every lodging property in the United States by having significant impact on the cost of mattresses, bedding and other furniture. Regulations of this nature would fall disproportional upon small businesses.

The lodging industry is one of service and accommodation. We pride ourselves in this. We must seize opportunities to ensure our guests, our customers, are safe and comfortable. The guest has a right to expect this and requests as much. A tragedy in one property affects us all.

Our industry understands the tremendous costs associated with fire loss, to both life and property. The lodging industry has been, and continues to be, vigilant in preventing, stopping, and limiting fire and smoke incidents. The lodging industry has established itself as a leader in fire safety and prevention.

Thank you for your consideration of this request.

Sincerely,

John P. Connors
Senior Vice President for Public Policy
American Hotel & Lodging Association
1201 New York Ave., NW
Washington, DC 20005

(202) 289-3120

Stevenson, Todd A.

From: Maher, Kevin [KMaher@ahla.com]
Sent: Tuesday, March 29, 2005 10:53 PM
To: Stevenson, Todd A.
Subject: Mattress NPR



CPSC Letter (37 KB)

March 29, 2005

Office of the Secretary
Consumer Product Safety Commission
Washington, DC 20207-0127

Dear Secretary:

We are writing to respectfully request that Consumer Product Safety Commission ("CPSC") extend for six months the time period for public comment in response to the Notice of Proposed Rulemaking ("NPRM") the CPSC issued on January 13, 2005, regarding its proposed Standard for the Flammability of Mattresses and Mattress/Foundation sets.

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Additional time is necessary for our industry to fully gather pertinent information and fully respond to the CPSC. Anything short of six months would not allow for a full and accurate record of the implications of this rulemaking on the lodging industry.

In the 23 years since 1980, the lodging industry has made tremendous strides in fire safety and our members are proud of our record. The lodging industry has been, and continues to be, vigilant in preventing, stopping, and limiting fire and smoke incidents.

Lodging operations must meet increasingly rigorous building codes designed to eliminate and mitigate risks from fire and smoke. Through requirements such as hard-wired smoke detectors, sprinklers, flammability testing of walls and doors, our industry continues to lead the way in fire prevention.

Our efforts have not gone unnoticed. In November 1996, the NFPA commended AH&LA recognizing the extraordinary commitment, efforts and record of achievement by our industry for excellence in providing and promoting safety from fire to our guests.

In fact, the NFPA announced in 1996 that the its annual study of U.S. fire losses showed such a dramatic drop in lodging industry fire losses that it would no longer include a separate entry for lodging. Rather, the NFPA began to include lodging industry in the "other" category. This, according to the NFPA, was "a milestone in the dramatic and remarkable progress of fire safety in the lodging industry." (NFPA Journal, July/August 1996, page 56)

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In its notice, the CPSC rightly directs many of its comments to fire problems in residential use of unsafe upholstered furniture. Given the past success, and ongoing

activity, with reducing fire incidents in the lodging industry, we strongly recommend the CPSC narrowly define the application of this regulation to private non-commercial residences that are not likely to have sprinklers, smoke detectors nor meet current fire safety standards.

Given the success in fire safety of the lodging industry, we believe it unnecessary for any Federal regulations to direct our members to replace existing upholstered furniture either retroactively or before the items have been fully utilized. The effect on the lodging industry of such a regulatory initiative could be enormous. Every lodging establishment, no matter how small, provides beds to its guests. A CPSC rulemaking could impact every lodging property in the United States by having significant impact on the cost of mattresses, bedding and other furniture. Regulations of this nature would fall disproportional upon small businesses.

The lodging industry is one of service and accommodation. We pride ourselves in this. We must seize opportunities to ensure our guests, our customers, are safe and comfortable. The guest has a right to expect this and requests as much. A tragedy in one property affects us all.

Our industry understands the tremendous costs associated with fire loss, to both life and property. The lodging industry has been, and continues to be, vigilant in preventing, stopping, and limiting fire and smoke incidents. The lodging industry has established itself as a leader in fire safety and prevention.

Thank you for your consideration of this request.

Sincerely,

John P. Connors
Senior Vice President for Public Policy
American Hotel & Lodging Association
1201 New York Ave., NW
Washington, DC 20005

(202) 289-3120

Mattress

537

~~Stevenson, Todd A.~~

From: t burger [tom@burgerengr.com]
Sent: Tuesday, March 29, 2005 1:32 PM
To: Stevenson, Todd A.
Subject: Mattress NPR

Hello. I may be too late in sending this, but I am against allowing or requiring mattress manufacturers to put insecticide or any poison in mattresses. My son is allergic to many things, and this is one of them. How can this be good for our health? Please take action to keep any additional products such as this being applied to bedding materials. Thanks.

Tom Burger

Arkansas

Mattress

538

~~Stevenson, Todd A.~~

From: Shawna Petersen [srp3@cox.net]
Sent: Wednesday, March 30, 2005 12:10 AM
To: Stevenson, Todd A.
Subject: Mattress NPR

I am strongly opposed to the new law requiring all mattresses to be chemically flame-proofed. I am a chemically-sensitive person with two chemically-sensitive children. We see many physical and behavioral symptoms resulting from chemical exposure in food alone. Our exposure in mattresses is unlike any other. We have full body and breathing contact for an average of eight hours every day for the rest of our lives. From what I understand there are no studies about what the long-term consequences will be. Someone else commented, "Forced inclusion of these chemicals constitutes a human experiment without consent" and I couldn't agree more.

Sincerely,
Shawna Petersen
10250 W Daley Lane
Peoria, Arizona 85383

3/30/2005

Mattress

539

~~Stevenson, Todd A.~~

From: kimberly burger [acupuncture.kim@cox.net]
Sent: Wednesday, March 30, 2005 10:33 AM
To: Stevenson, Todd A.
Subject: Mattress NPR

No Roach Killer Powder in the mattresses !

Keep unwanted email out.
Visit www.spamsubtract.com for more information.

Kosh, Martha A.

540

From: Adair, Patricia K.
Sent: Wednesday, March 30, 2005 11:01 AM
To: Kosh, Martha A.
Cc: Neily, Margaret L.; Adair, Patricia K.
Subject: FW: new contact information

Hello Martha,

I received the following email from Ms. Rajini Janardhan of MTL-ACTS on March 22, 2005, regarding the Commission's project to update 16 CFR 1610 Standard for the Flammability of Clothing Textiles. Please add these comments to the formal public comments on the ANPR.

Rajini's contact information is:

Ms. Rajini Janardhan
MTL-ACTS
Director, Global Regulatory Consulting and Education - Softlines Bureau Veritas Consumer Products Services, Inc. 244 Liberty Street Brockton, MA 02301 USA
Telephone: 508-897-6923

Thank you.

Patty

Patricia K. Adair
Textile Technologist
U.S. Consumer Product Safety Commission
Directorate of Engineering Sciences
Division of Combustion and Fire Sciences
Tel: 301-504-7536
Fax: 301-504-0533
email: padair@cpsc.gov

-----Original Message-----

From: rajini.janardhan@us.bureauveritas.com [mailto:rajini.janardhan@us.bureauveritas.com]
Sent: Tuesday, March 22, 2005 3:10 PM
To: Adair, Patricia K.
Subject: RE: new contact information

Hello Patty:

The following are some of the issues we face on a consistent basis with regards to 16 CFR 1610 and will be very helpful if the regulation can address these.

1. Feather testing. The questions are as follows:
 - Are feathers subject to the regulation 16 CFR 1610 if permanently attached to garments?
 - Are feathers subject to the regulation 16 CFR 1610 in the form of an accessory to a garment, example feather boas or if they are detachable / removable from the garment?
 - What definition or scope do feathers fall under, since the definition of fabric does not apply? How would feathers be classified - as a plain surface or raised surface material?
 - If they are not subject to the regulation, do they have to be tested and rated? Are they required to meet the regulation?
 - Whether they are subject to the regulation or not, if they are tested should the burn codes or ignition times be used for informational purposes only as they tend to burn very rapidly, example: average of 1.2 seconds for 10 specimens?
 - If feather trims are detachable (example: removable collar trim) and

the care instruction states 'remove feathers before washing,' should testing be done after refurbishing?

If feathers are considered to be raised surface, would a complete burn or severing the spine be considered a base burn? In other words, since feathers do not have a typical base as a regular fabric, how to determine if there is a base burn?

Should feathers be tested if they are less than 2 in width or are they exempt? If they need to be tested, how should they be tested? How to fit them in the bracket?

2. Leathers Testing.

The regulation needs to clarify if testing is required and if so, the methods to test 3. Fringe testing, trims, and other applications. Clarification is needed with regards to application of trims such as bows, appliques, beads, sequins, screen prints (flat and rubberized), decals, rhinestones vinyl and other patches - is the regulation applicable and method for testing 4. For exemptions, include all animal hair fibers with wool, and exclude elastane and Spandex 5. Guidelines/parameters for commercial dry-cleaning for global consistency. The degree of flame retardant removal is dependent on dry cleaning, so a parameter guideline (eg: solvent used, time to dry clean, type of machine to use etc.) would be highly beneficial since globally commercial dry cleaning procedure is inconsistent. 6. Clarify refurbishing procedures for "dry clean only" items. 7. Clarification on refurbishing procedures for flame retardant treated products and for components on products are labelled "remove collar before washing" or "remove faux fur trim before washing."

If you need additional information or would like to discuss further, please don't hesitate to contact me.

Regards...Rajini .

Dr. Rajini Janardhan
Bureau Veritas
Consumer Products Services
244 Liberty Street
Brockton, MA 02301
Tel: 508-897-6923
rajini.janardhan@us.bureauveritas.com

Janardhan/USA/VERITAS@VERITAS
"Adair, Patricia
K."
<PAdair@cpsc.gov
>

To: Rajini
cc:
Subject: RE: new contact information
Ref.:

03/18/2005 01:09
PM

Hi Rajini,

Thank you. I would really appreciate getting your comments. Have a good weekend.

Best regards,
Patty

Patricia K. Adair

Textile Technologist
U.S. Consumer Product Safety Commission
Directorate of Engineering Sciences
Division of Combustion and Fire Sciences
Tel: 301-504-7536
Fax: 301-504-0533
email: padair@cpsc.gov

-----Original Message-----
From: rajini.janardhan@us.bureauveritas.com
[mailto:rajini.janardhan@us.bureauveritas.com]
Sent: Friday, March 18, 2005 1:05 PM
To: Adair, Patricia K.
Subject: Re: new contact information

Dear Patty: Thanks for the info. Based on our conversation, I would like to send some comments to you regarding 1610 next week. These are issues that have come up repeatedly over the years and would like to bring to your attention. Have a great weekend.

Regards...Rajini

Dr. Rajini Janardhan
Bureau Veritas
Consumer Products Services
244 Liberty Street
Brockton, MA 02301
Tel: 508-897-6923
rajini.janardhan@us.bureauveritas.com

 "Adair, Patricia
 K."
Janardhan/USA/VERITAS@VERITAS To: Rajini
 <PAair@cpsc.gov cc:
 > Subject: new contact
information Ref.:

03/16/2005 02:13
PM

Dear Rajini:

It was great to see you at the ASTM D13 meeting in Philadelphia. My contact information is written below.

Best regards,

Patty

Patricia K. Adair
Textile Technologist
U.S. Consumer Product Safety Commission
Directorate of Engineering Sciences
Division of Combustion and Fire Sciences
Tel: 301-504-7536
Fax: 301-504-0533
email: padair@cpsc.gov

Unless otherwise stated, any views or opinions expressed in this e-mail (and any attachments) are solely those of the author and do not necessarily represent those of the U.S. Consumer Product Safety Commission.

Unless otherwise stated, any views or opinions expressed in this e-mail (and any attachments) are solely those of the author and do not necessarily represent those of the U.S. Consumer Product Safety Commission.

Stevenson, Todd A.

541

From: Joanna Fouch [JFOUCH51@peoplepc.com]

Sent: Wednesday, March 30, 2005 9:36 PM

To: Stevenson, Todd A.

Please do not put the chemicals into our mattresses. Our children cannot be exposed and either do I want to be exposed to sleeping on such poison beds!!!!!!

Sincerely,

Joanna Fouch

3/31/2005

542



U.S. CONSUMER PRODUCT SAFETY COMMISSION

mattress comment

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PROPRIETARY

UNAUTHORIZED DISCLOSURE PROHIBITED

This document contains Proprietary
information on Page(s) _____

Mattison 543

1549 East 21st Street
Brooklyn, N. Y. 11210
March 15, 2005

Mr. Todd A. Stevenson, Secretary
Office of the Secretary
U.S. Consumer Product Safety Commission
Washington, DC 20307-0001

Re: Mattresses NPR

Dear Mr. Stevenson:

On January 13, 2005 the Consumer Product Safety Commission (CPSC) published the proposed "Standard for the Flammability (Open Flame) of Mattresses and Mattress/Foundation Sets" and a separate "Standard to Address Open Flame Ignition of Bedclothes" (See 16 C.F.R. Parts 1633 and 1634, Federal Register vol. 70, no. 9, pages 2470 to 2517.) I wish to comment on the proposed mattress standard.

Currently the Commission's budget and field staffing are inadequate to properly enforce regulations covering chemicals and flammable fabrics. This is especially true in Puerto Rico and New York City. Many mattress manufacturers, including reconditioners, are probably not even in compliance with the current mattress flammability standard. The proposed cut of thirty staff positions will have a devastating effect upon the inspectional force and upon compliance with the proposed standard.

I have not, am not and do not intend to be financially connected to any manufacturer, distributor or retailer of mattresses or other the covered items. The comments are my own and not those of any organization.

From 1968 to 1973 I worked for the U.S. Food and Drug Administration (FDA) and played a key part in identifying hazards associated with lead paint and asbestos as well as identifying the very first banned toys. In 1973 I led a group of nineteen investigators who transferred from FDA to the Commission. My last position was as a Compliance Officer in CPSC's Eastern Regional Center (New York). In addition to assigned duties, I was the personally responsible for the ASTM standards for gasoline/fuel containers (Citizen's Petition 78-17, 45 FR 59376) and window guards. In 2002 I retired after forty-two years of federal service.

The current Standard for the Flammability of Mattresses and Mattress Pads (16 C.F.R. Part 1632) addresses fires ignited by cigarettes. It does not address open flame ignition. Thus, Whitney Davis, (Director of the Children's Coalition for Fire-Safe Mattresses, "CCFSM") petitioned for the establishment of a standard to address open flame fires. After review the Commission proposed the "Standard for the Flammability (Open Flame) of Mattresses and Mattress/Foundation Sets" (16 C.F.R. Part 1633).

As per the (January 13, 2005) proposal, annual loses due to mattresses/bedding fires were:

	<u>deaths</u>	<u>injuries</u>	<u>property</u>
Total loses (1998) million	410	2,260	\$255.4
Preventable by new standard	310-330	1,660-1,780.	

Overall the CPSC staff estimated that the new standard could prevent 80 to 86 percent of the deaths and 86 to 92 percent of the injuries occurring in addressable mattress/bedding fires.

In 2001 there were 557 manufactures of mattresses operating in 639 establishments. Thus, on average, mattresses each manufacturer was responsible for about .7 deaths and 4 injuries annually.

The staff expects the aggregate lifetime benefits associated with one year's production to be \$1.56 to \$1.88 billion. The corresponding expected aggregate cost of complying with the new regulation is only \$0.32 to \$1.11 billion. Thus, cost of manufacturing complying mattresses is reasonable.

The cost inspection and enforcement is approximately \$2,697 per inspected firm per year. If one third of the firms are inspected each year the cost per manufacturer/year is about \$900. The total yearly cost of inspecting one third of the manufacturers should be under \$200,000. The writer observed a non-injury mattress (and halogen lamp) fire, which resulted in more than a million dollars in damage. Thus, the cost of enforcement is insignificant compared to the cost of these fires.

A serious effort to inform manufacturers of the new standard will definitely encourage compliance. Local fire departments should be involved in the training. The writer was largely responsible for a CPSC/industry conference held in the New York City Fire Department Training Center in 1984(?). That conference successfully made industry aware of the purpose and requirements of the original standard. Similar conferences should be conducted in cooperation with local fire departments when the proposed standard becomes effective.

Until about three years ago the Commission did not have a compliance program to enforce the current standard. The small number of press releases issued on this subject illustrates the lack of compliance activity. In New York City a number of firms offer reconditioned used mattress for sale to consumers. They are probably not in compliance with 16 CFR 1632.

The Commission is charged with protecting the public from unreasonable risks of serious injury or death from 15,000 types of consumer products that pose a fire, electrical, chemical, or mechanical hazard. Its work contributed significantly to the thirty percent decline in the rate of deaths and injuries associated with consumer products over the past thirty years.

Deaths, injuries and property damage from consumer products cost the nation more than \$700 billion annually. To do this, the Commission's entire budget is about \$62,000,000 (in 2005). This is about twice its original 1974 budget in absolute dollars. It does not account for inflation since then. It also compares with \$254 million that the administration spent on public relations contracts in the last four years. (New York Times March 13, 2005, pages 1 and 34.)

The Commission has not properly enforced the current standard due to a lack of experienced manpower. Now there are reports that the administration has proposed a cut of thirty positions in the Commission's staff. If the field is cut it will have a devastating effect upon the already undermanned inspectional force. This is particularly true in Puerto Rico and New York City (the center of the garment, toy, novelty and import industries).

The Commission has not had an investigator stationed in Puerto Rico for about twenty-five years. All indications are that many of the products sold in Puerto Rico are in violation of the Commission's regulations and standards. It is unlikely that manufacturers there are in compliance with the current mattress standard and they will probably not comply with the new standard until the lack of staffing is addressed.

The original New York office staff was comprised of nineteen investigators (fourteen in the city and five in nearby resident posts), six import inspectors and six chemists. Today there is only one investigator actually stationed in the city (at the extreme southern tip of Staten Island). Other investigators must travel in from New Jersey and Long Island to provide coverage.

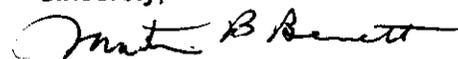
In 1981 almost all of the remaining original New York staff members were discharged as the result of a targeted "Reduction In Force." This included Charles Kessler, who was the agency's best field investigator. It should also be noted that the investigators and chemists who were discharged had degrees in the sciences and engineering.

However, regional management hired at least five investigators, supervisors and managers who lacked necessary ability, education and experience. Some of these individuals had never even taken a single college (science) course. One was described as "semi-literate at best." Another was on leave more often than at work. They could not adequately conduct hazardous substances (chemical) or flammable fabrics inspections. Yet they were hired at or reached the GS-12, 13 and even 14 levels! (None are currently on the staff.) Employees hired in the future should be qualified to conduct complex inspections before promotion to the GS-11 level.

To a limited extent, cooperation with other agencies may increase the effectiveness of the field. Some states, including New York, license manufacturers of mattresses. Joint inspections with state authorities may enhance compliance activities. Fire departments may find it cost effective to inspect mattress manufacturers for the Commission.

The Commission is not properly monitoring imports. While mattresses are usually manufactured within a short distance of their intended sale, some have been imported from Canada and perhaps Mexico. Crib mattresses may be shipped longer distances. Since U.S. Customs is now primarily engaged in homeland security programs, the burden of inspecting imports now rests upon the Commission.

Sincerely,



Martin B. Bennett