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Standard Consumer Safety Performance Specification for Commercial Cribs[1]

This standard is issued under the fixed designation F2710; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

INTRODUCTION

This consumer safety performance specification addresses incidents identified by the U.S. Consumer Product Safety Commission (CPSC) which involved infant cribs used in commercial uses such as the hospitality and day care industries.

In response to incident data compiled by CPSC, and in recognition of the more intense use that cribs which are used for commercial purposes encounter, this consumer safety performance specification attempts to minimize the hazards which result from structural failure, instability, and related deficiencies. This consumer safety performance specification will also address issues related to maintenance and repair of these products in use, their transportation and storage and the wide variety of uses for these products.

1. Scope

1.1 This consumer safety performance specification establishes performance requirements, test methods, and marking requirements to promote the safe use of cribs in commercial environments such as hotels, rentals, motels, day care centers and the like.

1.2 This consumer safety performance specification subsumes the federal and ASTM standards which are in existence for these types of product when those products are used in non-commercial applications.

1.3 This consumer safety performance specification includes products intended to provide a safe sleeping environment such as full size cribs, non full size cribs, and playards and includes both rigid and mesh sided units. The term "crib" as used in this standard includes all of these items.

1.4 Products such as bassinets and cradles are specifically excluded from this consumer safety performance specification.

1.5 No commercial crib produced after the approval date of this consumer safety performance specification shall, either by label or other means indicate compliance with this specification unless it conforms to all applicable requirements contained herein, before and after all testing.

1.6 The following precautionary caveat pertains only to the test method portions of this consumer and other referenced safety specifications. The standard(s) may involve the use of hazardous materials, operations and equipment. The standard(s) does not purport to address all of the safety concerns, if any associated with its use. It is the responsibility of the user of this standard to establish all appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.

1.7 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.8 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

F406 Consumer Safety Specification for Non-Full-Size Baby Cribs/Play Yards

F1148 Consumer Safety Performance Specification for Home Playground Equipment

F1169 Consumer Safety Specification for Full-Size Baby Cribs

[1] This consumer safety performance specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.57 on Commerical Cribs.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

2.2 *Federal Regulations:*[3]
16 CFR 1219 Safety Standard for Full-Size Baby Cribs
16 CFR 1220 Safety Standard for Non-Full-Size Baby Cribs
16 CFR 1500 Hazardous Substances and Articles; Administration and Enforcement Regulations

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *commercial crib, n*—any crib, except those specifically excluded in 1.4 above, used to enclose children or infants, generally under the age of 2 years old which is rented to or provided for consumers by a commercial entity for their use.

3.1.1.1 *Discussion*—This would include but not be limited to rental cribs for the home, cribs provided in a day care environment, cribs used in a hotel or hospitality enterprise, or those used in hospitals/healthcare operations.

4. Calibration and Standardization

4.1 See relevant sections in Consumer Safety Specification F406 or Consumer Safety Specification F1169.

4.2 See relevant sections in 16 CFR 1219 or 16 CFR 1220.

5. General Requirements

5.1 *ASTM Standards*—Non-full sized and full sized cribs must comply with all requirements of Consumer Safety Specification F406 and Consumer Safety Specification F1169, respectively.

5.2 *Federal Regulations*—Full sized and non-full sized cribs must comply with all requirements of 16 CFR 1219 and 16 CFR 1220, respectively.

5.3 *Static Load*—No crib shall exhibit structural failure, loosening of fasteners, damage to latching or locking mechanisms, or failure of latching or locking mechanisms when tested in accordance with the test described in 6.1.

5.4 *Wheel Threshold and Durability*—This test is only for cribs with wheels or casters. The crib casters/wheels of the crib shall not penetrate the gap more than ⅛ in. when tested in accordance with Test A in 6.2.

5.4.1 After completion of the cyclic test of Test B in 6.2, the crib shall comply with either 16 CFR 1219 or 16 CFR 1220, as appropriate.

5.5 *Cycle Testing*—No crib shall exhibit structural failure, loosening of fasteners, damage to latching or locking mechanisms, or failure of latching or locking mechanisms when tested in accordance with the test methods in Sections 4.24 and 4.25 of the Product Safety Laboratory Reference Manual of Health Canada, Book 5 Laboratory Policies and Procedures, Part B: Test Methods Section, Method M-12, "Test Method for Cribs and Cradles."

5.6 *Fasteners*—No wooden commercial crib shall be sold which requires consumer assembly using wood screw fasteners. Factory assembly using wood screws on load bearing elements is allowed if the wood screws are a second method of attachment. Factory assembly of non load bearing elements is allowed with wood screws alone.

5.7 *Dropside Dynamic Test*—No commercial cribs with drop sides shall exhibit structural failure, loosening of fasteners, damage to latching or locking mechanisms or failure of latching or locking mechanisms when tested in accordance with 6.3.

6. Test Methods

6.1 *Crib Static Load*—A crib interior shall be loaded with a total load applied vertically without shock, and the total load shall remain for 5 min. For the purpose of applying the load, the crib interior or mattress support area shall be divided into four equal area quadrants. The total load shall be located in equal portions, in the center of each quadrant and at the center point of the mattress support area, a total of 5 points.

6.1.1 For this test, loads shall be placed on load distribution blocks. Each block shall be 6 by 6 by ¾ in. (15.2 by 15.2 by 2 cm) and made of wood.

6.1.2 The total load shall be the sum of the following:

6.1.2.1 Based on the area of the crib interior, determine the maximum number of users, as follows:

$$\textit{Area of crib interior } (ft^2\ (cm^2))/X = N \quad (1)$$

where:

N = maximum number or users, and
X = area for maximum age of user from Table 1.

Round N to the nearest whole number.

6.1.2.2 With the maximum number of users, apply the load for two 95th percentile maximum age users and the balance of the total users, 50th percentile maximum age users mass from Table 1, as follows:

$$N - 2 = N^1$$

$$2 \times 95\textit{th percentile lb } (kg) \textit{ of maximum age user} + N^1 \times 50\textit{th percentile lb } (kg) \textit{ of maximum age user} = \textit{total load}$$

6.2 *Threshold Test:*

6.2.1 Place a load of 180 lb (81.6 kg) in the crib to be tested. The load shall be distributed evenly per 6.1 (Crib Static Load test).

6.2.1.1 *Test Platform*—The test platform shall consist of two flat planes, of appropriate size to allow for crib movement as described below with enough extra room for swivel wheels to change direction each cycle. The planes shall be securely spaced so that there is a gap between them 1-¼ in. (3.2 cm) wide between their edges. The gap shall be a minimum of 1 in. (2.5 cm) deep. The edge radius of the planes shall be a maximum of 1/16 in. (1.6 mm).

TABLE 1 Structural Loading

Age (Years)	50th Percentile lb (kg)	95th Percentile lb (kg)	Area Occupied by user, ft² (cm²)
1.5	22.7 (10.3)	26.8 (12.2)	0.6 (558)
2	28 (12.7)	29 (13.2)	0.7 (651)
3	32.8 (14.9)	42.9 (18.9)	0.8 (744)
4	35.3 (16)	43 (19.7)	0.8 (744)

[3] Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, http://www.access.gpo.gov.

6.2.2 *Test A*—Slowly roll the crib across the gap allowing the wheel/caster to stop in and penetrate the gap as much as possible. Using appropriate measurement devices measure the penetration of the wheel/caster into the gap.

6.2.3 *Test B*—Cycle the crib across the gap 500 times. A cycle shall consist of all wheels/casters of the crib crossing the gap once (250 times in each direction). Each cycle shall be 4 ± 1 s. Inspect the crib for damage or failure.

6.3 *Drop Side Dynamic Test:*

6.3.1 Prevent crib movement during crib side drop test by restraining the legs of the crib in an appropriate manner at floor level.

6.3.2 Suspend 30 lb (13.6 kg) mass from center of top rail of the crib drop side. Fix the mass to the drop side such that mass will not move and impact crib during test.

6.3.3 Raise crib drop side by any suitable means to a height just prior to latch engagement and then release. Repeat the drop sequence at a rate of one cycle every 3 ± 1 s for a total of 500 cycles. Inspect crib, drop side and hardware for damage or failure.

7. Instructional Information and Warnings

7.1 Full-sized cribs and non-full sized cribs must comply with all instructional and warning requirements of Consumer Safety Specification F406 and Consumer Safety Specification F1169.

7.2 Warnings and instructional literature must be presented in English and at least one other language, either French or Spanish, whichever is more appropriate for the use.

7.3 Instructional information shall address suggested maintenance and inspection programs.

8. Keywords

8.1 commercial crib; crib; day care; hospitality; hotel; motel; non-full size crib; rental crib

APPENDIX

(Nonmandatory Information)

X1. RATIONALE

X1.1 *Paragraph 6.1*—The platform requirements in Consumer Safety Performance Specification F1148 home playground provides a method for calculating the area of a platform to be tested and the application method of the test loads. This method was used for the maximum static load in the crib interior and simulates the number of users capable of using a specific area. The method thus takes into consideration over and undersized non-full sized cribs as well a full sized cribs. This section reproduces the Consumer Safety Performance Specification F1148 section on platforms with changed wording to reflect usage of the method for cribs. Also reproduced is the loading chart for platforms for children from 1.5 years to 4 years of age. This evaluation provides the worst case situation for the absolute maximum number of children in the crib.

X1.2 *Paragraph 7.2*—Many of the assemblers and end users of these products have limited English language capability, particularly in the hotel and hospitality industries. This recognizes this issue.