

(iii) *Heating devices.* Toy ovens, casting toys, popcorn and candy makers, and other toys requiring the insertion of any materials or substances shall be additionally tested by feeding crumpled strips of newspaper and tissue paper into or onto the toy in place of the intended materials or substances. The test strips shall be conditioned for at least 48 hours in air at a temperature of 25° ±4 °C. (77° ±7 °F.) and a relative humidity of 50 percent ±5 percent. The test strips shall be 2 inches wide by 8 inches long before crumpling. The crumpled paper shall occupy not more than 25 percent of the accessible volume. The performance of the toy shall be considered unacceptable if flaming occurs within a 60-minute period following the attainment of normal operating temperatures. If a light bulb is used for heating purposes, the test shall be conducted using the largest wattage bulb that can be easily inserted into the socket.

(h) *Strain-relief test.* (1) The strain-relief means provided on the flexible power cord of a toy shall be capable of withstanding a direct pull of 35 pounds applied to the cord for 2 minutes without displacement of the strain-relief unit or a deformation of the anchoring surface that would produce a stress which would result in a potentially hazardous condition. A 35-pound weight shall be attached to the cord and supported by the toy in such a manner that the strain-relief means is stressed from any angle that the construction of the toy permits. The test shall be conducted with the electrical connection within the toy disconnected.

(2) The initial 2-minute test shall be conducted with the force vector parallel to the longitudinal axis of the cord and perpendicular to the anchoring surface of the strain-relief unit. Each test at other angles of stress shall be conducted for periods of 1 minute. The strain-relief means is not acceptable if, at the point of disconnection of the cord, there is any movement of the cord to indicate that stress would have resulted on the connections.

(3) Except for toys weighing more than 10 pounds, the strain-relief unit and its support base shall be designed and constructed in such a manner that no indication of stress would result

which would produce a hazard when the cord is held firmly in place 3 feet from the strain-relief unit and the toy is dropped the 3 feet at any angle.

[38 FR 27032, Sept. 27, 1973; 38 FR 30105, Nov. 1, 1973, as amended at 43 FR 26428 June 20, 1978; 46 FR 63251, Dec. 31, 1981; 51 FR 34199, Sept. 26, 1986]

**§ 1505.7 Maximum acceptable surface temperatures.**

The maximum acceptable surface temperatures for electrically operated toys shall be as follows:

Surface type (as described—in § 1505.6 (g)(2))	Thermal inertia type <sup>1</sup>	Temperatures	
		°C.	°F.
A .....	1	50	122
A .....	2	55	131
A .....	3	60	140
B .....	1	55	131
B .....	2	65	149
B .....	3	75	167
C (unmarked) .....	1	65	149
C (unmarked) .....	2	75	167
C (unmarked) .....	3	85	185
C (unmarked) .....	4	95	203
C marked .....	1	70	158
C marked .....	2	90	194
C marked .....	3	110	230
C marked .....	4	130	266
D (unmarked) .....	1	55	131
D (unmarked) .....	2	70	158
D (unmarked) .....	3	80	176
D (unmarked) .....	4	90	194
D marked .....	1	60	140
D marked .....	2	75	167
D marked .....	3	100	212
D marked .....	4	125	257
E .....	( <sup>2</sup> )	( <sup>3</sup> )	( <sup>3</sup> )

<sup>1</sup> Thermal inertia types are defined in terms of lambda as follows:

Type 1: Greater than 0.0045 (e.g., most metals).

Type 2: More than 0.0005 but not more than 0.0045 (e.g., glass).

Type 3: More than 0.0001 but not more than 0.0005 (e.g., most plastics).

Type 4: 0.0001 or less (e.g., future polymeric materials).

The thermal inertia of a material can be obtained by multiplying the thermal conductivity (cal./cm./sec./degrees C.) by the density (gm./cm.<sup>3</sup>) by the specific heat (cal./gm./degrees C.).

<sup>2</sup> All types.

<sup>3</sup> No limit.

**§ 1505.8 Maximum acceptable material temperatures.**

The maximum acceptable material temperatures for electrically operated toys shall be as follows (Classes 105, 130, A, and B are from "Motors and