1.0 PURPOSE

The purpose of this specification is to minimize the potential for the generation of a hazardous condition (e.g. small parts, sharp points, sharp edges, etc.) arising as a result of a child twisting (torque) and/or pulling (tension) toy projections or other toy components by means of specifying required torque/tension values that are substantially higher than those children are normally capable of exerting under reasonably foreseeable conditions of use and abuse. In addition, compliance with the requirements of this specification will meet or exceed F963 (US), EN71-1 (Europe), ISO 8124-1 (International), and Canadian Requirements.

2.0 SCOPE

Torque/tension test applies to toys with projections, parts or any component that a child can grasp with at least the thumb and forefinger or the teeth.

3.0 EXEMPTIONS

3.1 Fabric seams

Seam tension is carried out per SRS-007 Seam Tension Specification.

4.0 DEFINITIONS

4.1 Rattle

A "rattle" is an infant's toy, intended to be handheld, usually containing pellets or other small objects and which produces sounds when shaken. A "rattle" may also have a noise-making component on its exterior surface (e.g. rings trapped between the two ends of a dumbbell shape).

5.0 SPECIFICATIONS

5.1 Age Grade Under Three Years

All Hasbro, Inc. products with an age grading under 3 years must withstand the torque/tension test without the generation of small parts, sharp points, sharp edges or other hazardous conditions.
5.2 Age Grade Over Three Years

All Hasbro, Inc. products with an age grading above three years must withstand the torque/tension test without generating sharp points, sharp edges, or other hazardous conditions.

5.3 All Products

All Hasbro, Inc. products must withstand torque/tension test without exhibiting "significant" damage. "Significant" damage is functional and/or aesthetic damage that is non-hazardous, presents no potential for the generation of a hazardous condition, but is not acceptable to Marketing and/or Quality Assurance.

6.0 TEST EQUIPMENT

6.1 Torque Test

The loading device shall be a torque gauge, torque wrench, or other appropriate device having an accuracy of plus/minus 0.2 inch-lb (0.023 Nm) and be capable of measuring up to 12.0 inch-lbs (1.36 Nm). When torque to be applied is greater than 12.0 inch-lbs (1.36 Nm) the accuracy of device used must be plus/minus 0.5 inch-lb (0.056 Nm) and the device must be capable of measuring up to 30.0 inch-lbs (3.39 Nm).

6.2 Tension Test

The loading device is to be a self-indicating gauge or other appropriate means having an accuracy of plus/minus 0.5 lbs. (2.22 N) (i.e., Chatillon DPP-50 Push-Pull Gauge) and be capable of measuring up to 50.0 lbs (222.4 N).

6.3 Clamps

The clamp(s) shall be capable of holding the test component firmly and transmitting a torsional or tensile force without reducing the structural integrity of test component.

Clamps that visibly stress a test component or cause a test component to move or "lift" (e.g. an eye on a stuffed toy) prior to the application of the appropriate test force are not acceptable for use.

7.0 TEST PROCEDURE

7.1 Torque Test

The toy (or component) is rigidly fastened in any reasonable test position. On relatively small, easily handled items, one hand may hold the toy (or component) and the other hand may apply the appropriate test force. On larger or otherwise unwieldy items, the item must be fastened in a clamp or vise and the test clamp, then applied to the test component. (Please note that the "clamping" must not have an effect on the structural integrity of the item).
With the toy rigidly fastened in any reasonable test position,* the specified torque shall be applied evenly within a period of 5 seconds in a clockwise direction until a rotation of 180° has been attained or the specified torque attained. The torque or the 180° rotation shall be maintained for an additional 10 seconds. The torque shall then be removed and the test procedure shall then be repeated in a counterclockwise direction.

*NOTE 1: Projections, parts, or assemblies that are rigidly mounted on an accessible rod or shaft designed to rotate along with the projections, parts or assemblies shall be tested with the rod or shaft clamped to prevent rotation.

*NOTE 2: In cases where a handle, knob, dial or other projection is graspable by hand and is intended to be turned by the user (e.g. a wind-up handle or knob) and has a major dimension greater than 1.0" (2.54 cm) then the applied torque shall be as follows:

\[
\text{APPLIED TORQUE} = 6.0 \text{ in.-lbs. } \times \text{ (major dimension of graspable projection in inches)}
\]

7.2 Tension Test

With the previously torque-tested sample fastened in a convenient position, an appropriate clamp shall be attached to the test object or component. The specified force shall be directly and evenly applied within a period of 5 seconds, parallel to the major axis of the test component and maintained for an additional 10 seconds. The tension clamp shall then be removed and a second clamp appropriate for pulling at 90° shall be attached to the test object or component. The specified force shall be evenly applied, within a period of 5 seconds, perpendicularly to the major axis of the test component and maintained for an additional 10 seconds.

7.3 Torque and Tensile Force Specifications

The Hasbro specifications for torque and tensile force versus age grading are given below:

<table>
<thead>
<tr>
<th>Age Grading</th>
<th>Torque*</th>
<th>Tension</th>
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<tbody>
<tr>
<td>AGES UNDER 3 YEARS</td>
<td>6.0 in-lb (0.68 Nm)</td>
<td>25.0 lbs (111.2 N)</td>
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<tr>
<td>RATTLES</td>
<td>9.0 in-lb (1.02 Nm)</td>
<td>25.0 lbs (111.2 N)</td>
</tr>
<tr>
<td>AGES 3 AND OVER</td>
<td>6.0 in-lb (0.68 Nm)</td>
<td>21.0 lbs (93.41 N)</td>
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*Certain projections with major dimensions greater than 1” may require a higher torque application; see above section 7.1 NOTE 2. 6.0 in-lb (0.68 Nm) applies to graspable projections with major dimensions of 1.0" (2.54 cm) or less.
8.0 REFERENCES

8.1 16 CFR 1500.50, 1500.51, 1500.52, and 1500.53
8.2 CPSC Laboratory Manual, June, 2010
8.3 ASTM F963
8.4 EN 71-1
8.5 ISO 8124-1
8.6 SRS-007 Seam Tension Specification

9.0 REVISION LOG

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<tr>
<th>REVISION LETTER</th>
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<td>G</td>
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