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1 SCOPE

- 1.1 This method describes a procedure for testing rattles described in item 18 of Part II of Schedule I to the Hazardous Products Act (HPA) to determine if they meet the applicable requirements set out in the Hazardous Products (Toys) Regulations. Specifically, the method is intended to verify that no sharp edges or sharp points can become exposed with reasonably foreseeable use and that no part or component of the product will impinge on the base of a test template, whether attached to the product or separated from it by the application of a force or torque. Since the numerical values of performance measures are based upon regulatory requirements, the tolerances for these values have been chosen such that no test parameter is applied to the product that results in a more severe condition than that specified in the regulation.

2 APPLICABLE DOCUMENTS


- 2.1 The Hazardous Products Act (HPA).
- 2.2 Hazardous Products (Toys) Regulations (C.931), hereinafter referred to as the Regulations.
- 2.3 Test Method M00.1 (Test Procedures to Determine Mechanical Hazards - Small Components), Book 5.
- 2.4 Test Method M00.2 (Test Procedures to Determine Mechanical Hazards - Sharp Edges), Book 5.
- 2.5 Test Method M00.3 (Test Procedures to Determine Mechanical Hazards - Sharp Points), Book 5.
- 2.6 Test Method M01.1 (Test Procedures to Determine Mechanical Hazards of Toys - Reasonable Forseeable Use), Book 5.
- 2.7 PSL Project Report 2002-0717 Method Revision: TEST METHOD FOR RATTLES.
- 2.8 General Guidelines for Evaluating and Expressing the Uncertainty of Accredited Laboratories' Measurement Results, CLAS Reference Document 5, May 1999.

3 SAMPLING

- 3.1 The following test procedure should be conducted on the number of sample elements provided or received.

4 APPARATUS

- 4.1 A force gauge capable of measuring up to 50 N with a precision of 0.05 N.

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4.2 Anchor Hocking torque meter or a torque meter capable of measuring up to 1 newton meter, with a precision of 0.1 newton meters.

4.3 A selection of clamps.

4.4 Impaction (rattle) gauge template (Figure 1).

5 TESTING PROCEDURE

5.1 IMPACTION TEST:

5.1.1 Procedure

5.1.1.1 Place the impaction gauge on a flat horizontal surface.

5.1.1.2 Under its own weight, apply the product or component under test to the opening in the gauge and note if any part impinges upon the surface on which the gauge rests for any orientation of the product or component.

5.1.2 Results

5.1.2.1 Report whether or not any part of the product or component impinges upon the surface on which the gauge rests.

5.2 DROP TEST:

5.2.1 Procedure

5.2.1.1 Conduct the Drop Test as described in section 5.2 of Test Method M01.1. Follow the procedures for toys intended for use by children under 3 years old.

5.2.1.2 If any component separates or is damaged, keep it for determination of sharp edges, sharp points and impaction hazards.


5.2.2 Results

5.2.2.1 Record the results of the Drop Test as described in section 5.3 of Test Method M01.1.

5.3 50 N PUSH/PULL TEST:

5.3.1 Procedure

5.3.1.1 Using the force gauge and one of the various clamping devices, over a 5 second period, gradually apply a push or pull force of up to, but not exceeding 50 N, and maintain the force for 10 seconds to any part of the

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product or to any of its components which are suspected to be separable under these conditions.

5.3.1.2 If any component separates or is damaged, keep it for determination of sharp edges, sharp points and impaction hazards.

5.3.2 Results

5.3.2.1 Record the details of any damage, including the value of the force that caused detachment of any part or component of the product.

5.4 TORQUE TEST:

5.4.1 Procedure

5.4.1.1 Place the rattle in the specimen holder of the torque meter and apply a torque approaching but not equal to or exceeding 1 newton meter to any part of the product or to any of its components which are suspected to be separable under these conditions.

5.4.1.2 If any component separates or is damaged, keep it for determination of sharp edges, sharp points and impaction hazards.

5.4.2 Results

5.4.2.1 Record the details of any damage, including the value of the torque that caused detachment of any part or component of the product.

5.5 SMALL COMPONENTS, SHARP EDGES AND SHARP POINTS TEST:

5.5.1 Procedure


5.5.1.1 If any component separates or is damaged while performing the Drop Test, Push/Pull test or the Torque test, test for small components, sharp edges and sharp points on the product and the separated or damaged component(s) as detailed in Test Methods M00.1, M00.2 and M00.3. Record the results as detailed in those methods.

5.6 SECOND IMPACTION TEST:

5.6.1 Procedure

5.6.1.1 Repeat the impaction test from section 5.1 for the rattle and for any detached components resulting from tests in sections 5.2, 5.3, and 5.4.

5.6.2 Results

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5.6.2.1 Report whether or not any part of the product or component impinges upon the surface on which the gauge rests.

6 QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

- 6.1 Ensure that all measuring instruments are functional and are calibrated with traceability to national or international standards.
- 6.2 Testing and the results obtained according to this method include uncertainty associated with the:
- (i) uncertainty of any or all calibrations by an accredited calibration laboratory of the apparatus stated and used in this method,
 - (ii) standard uncertainty or standard deviation of a series of repeated measurements of masses or with instruments stated and used in this method (documented in the Equipment Record binder),
 - (iii) a coverage factor ($k = 2$) to express an expanded uncertainty ($U = k u_c$, where u_c is the combined standard uncertainty) for a level of confidence of approximately 95%, assuming normal distribution (Reference: General Guidelines for Evaluating and Expressing the Uncertainty of Accredited Laboratories' Measurement Results, CLAS Reference Document 5, May 1999).
- 6.3 The principal uncertainties associated with this method are due to:
- (i) Variations in the application of the test procedure due to personnel conducting the test.
 - (ii) Uncertainty associated with the measuring instruments.
 - (iii) Variation between samples used for the test.

7 TEST REPORT

- 7.1 The test report shall contain the following information:
- 7.1.1 A description of the product to include (where available): brand, style, country of origin, photo, UPC and other pertinent information.
 - 7.1.2 The number of sample elements tested.
 - 7.1.3 The results of the tests (conducted in the sequence presented in section 5 of this test method) with specific details for any non-compliance or potential problems observed.
 - 7.1.4 The analyst's name and signature as well as the name(s) and signature(s) of the reviewer(s).

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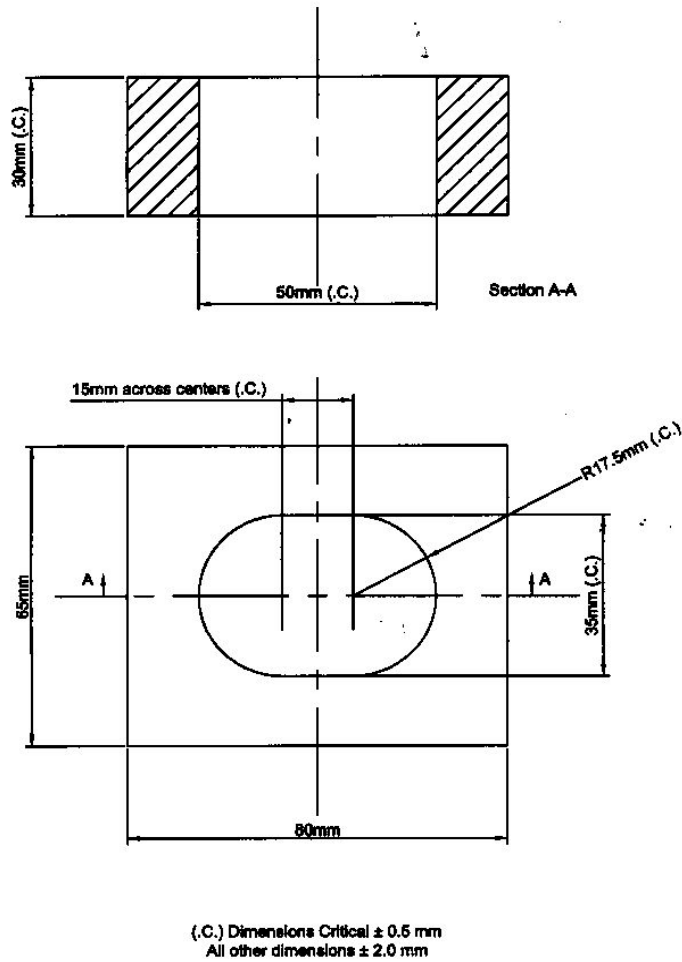



Figure 1: Gauge to Determine the Impaction Hazard of Rattles

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