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Standard Consumer Safety Specification for Non-Powered Scooters[1]

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INTRODUCTION

This consumer safety performance specification addresses scooter incidents that were identified by the Consumer Product Safety Commission (CPSC). With the recent introduction and popularity of new lightweight scooters, related injuries to children less than 15 years old have dramatically increased. The purpose of this consumer safety specification is to establish nationally recognized safety requirements for nonpowered scooters.

1. Scope

1.1 This consumer safety specification covers establishment of performance requirements, test methods, and labeling requirements to minimize the hazards to users of scooters as identified in the introduction.

1.2 This specification is intended to cover use of this product for children ages 5 years and older.

1.3 No scooter produced after the approval date of this specification shall, either by label or other means, indicate compliance with this specification unless it conforms to all requirements herein.

1.4 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.

1.5 The following precautionary caveat pertains only to the test method portion, Section 7, of this consumer safety specification: *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]

D3359 Test Methods for Measuring Adhesion by Tape Test

2.2 *Federal Standards:*

16 CFR-1303 Ban of Lead-Containing Paint and Certain Consumer Products Bearing Lead-Containing Paint

16 CFR-1500 Hazardous Substances Act Regulations, including sections:

1500.48 Technical Requirements for Determining a Sharp Point in Toys or Other Articles Intended for Use by Children Under Eight Years of Age

1500.49 Technical Requirements for Determining a Sharp Metal or Glass Edge in Toys or Other Articles Intended for Use by Children Under Eight Years of Age

1500.50-53 Tests Methods for Simulating Use and Abuse of Toys and Other Articles Intended for Use by Children

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *conspicuous, adj*—a label that is visible when the unit is assembled.

3.1.2 *deck, n*—the generally low horizontal platform on a scooter upon which the user places one or both feet.

3.1.3 *dynamic load, n*—force applied to an item by means of motion or impact.

3.1.4 *manufacturer's recommended use position, n*—any position that is presented as a normal, allowable, or acceptable configuration for use of the product by the manufacturer in any descriptive or instructional literature. This specifically excludes conditions such as when the scooter is unassembled (completely or partially) or folded, and positions that the manufacturer shows or explains as being unacceptable, unsafe, or not recommended.

3.1.5 *protective components, n*—specific items added to a product with the primary purpose of reducing a hazard such as sharp edges, entrapment holes, protrusions, etc.; normally these components cover or shield the area of the hazard.

[1] This specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.52 on Scooters.

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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.

3.1.6 *scooter, n*—a vehicle that has two or more wheels, a low platform, a vertical element for the user to grasp, and a method of steering and is propelled by the user pushing one foot against the ground with the other foot resting on the platform.

3.1.7 *static load, n*—a vertically downward load applied by a dead weight or other means.

4. General Testing Requirements

4.1 The unit shall be completely assembled, unless otherwise noted, in accordance with the manufacturer's instructions.

4.2 The product to be tested shall be in a room with an ambient temperature of 73 ± 9°F (23 ± 5°C) for at least 1 h prior to testing. Testing shall then be conducted within this temperature range unless a test specifically requires another temperature.

4.3 All testing required by this specification shall be conducted on the same unit unless otherwise specified (see 7.1).

5. General Requirements

5.1 The unit shall conform to the federal regulations specified in 2.2 of this specification both before and after all testing.

5.2 Prior to testing, any exposed parts shall be smooth and free of splinters, spurs, and burrs.

5.3 *Latching Mechanisms*—Any unit that folds shall have a latching device or other provision in the design that will prevent the unit from unintentional folding when properly placed in the manufacturer's recommended use position. Products with latching devices for prevention of unintentional folding shall be tested in accordance with 7.9. During and upon completion of this test, the unit shall remain latched in its manufacturer's recommended use position.

5.4 *Folding Mechanisms, Hinges, and Clearances*—This requirement is intended to eliminate possible crushing, laceration, or pinching hazards that might occur in folding mechanisms and hinges. Examples are the motion of a hinge that produces a scissor action and the changing clearances at the hinge line between two hinged portions, such that the gap will admit fingers at one position of the hinge but not at all positions. This requirement is also intended to eliminate possible hazards that may be caused by changing clearances. The different pinch clearance requirements listed reflect the different modes of entrapment or pinching that may be encountered. Scooters shall meet these requirements after they are tested in accordance with Section 7.

5.4.1 *Hinge-Line Clearance*—Scooters having a gap or clearance along the hinge line between a stationary portion and a moveable portion that weighs more than ½ lb (0.2 kg) shall be so constructed that, if the accessible gap at the hinge line will admit a 3⁄16-in. (5-mm) diameter rod, it will also admit a ½-in. (13-mm)–diameter rod at all positions of the hinge.

5.4.2 *Accessible Clearances for Moveable Segments*—This requirement concerns clearances between movable segments on scooters intended for children, where the potential for pinching or crushing fingers or other appendages exists. It includes, but is not limited to, wheels and rigid-wheel wells, fenders, or the radial clearance between the wheels and chassis of scooters. If such accessible clearances admit a 3⁄16-in. (5-mm) diameter rod, they shall also admit a ½-in. (13-mm) diameter rod in order to prevent the trapping of fingers.

5.4.3 *Inaccessibility of Mechanisms*—Mechanisms in scooters shall not have any accessible part of the mechanism present a pinch or laceration hazard.

5.5 *Labeling*—Warning labels or warnings applied directly onto the surface of the product shall be permanent when tested in accordance with 7.10.

6. Performance Requirements

6.1 All components specified under Test Methods 7.1 – 7.7 shall not show any evidence of material separation, visible cracking, or component failure that presents a hazard to the user. Permanent deformation of the scooter deck shall be allowed after the test, provided there is no contact with the ground by any structural or rigid component when the scooter is stood upright, resting on all wheels with the steering in the forward direction.

6.2 *Brakes (for Scooters with Brakes)*—The braking system (hand or foot operated) shall prevent the scooter's wheel from rotating more than ¼ revolution when tested in accordance with 7.8.

7. Test Methods

7.1 If, during the course of conducting the test methods in this safety specification, a test sample suffers any permanent deformation or damage, an additional test sample of the same model shall be used for the remainder of the test methods.

7.2 *Deck Test:*

7.2.1 Apply a static load of three times the manufacturer's maximum specified weight limit, or 600 lb (273 kg) if there is no maximum specified weight limit, to a nominal 6 by 6 by 2-in. (15 by 15 by 5-cm) wooden block centered between the front and rear axles of the scooter and centered axially. The load shall be applied for a period of 5 min.

7.3 *Handle/Stem Compression Test:*

7.3.1 Close the handle bar/stem adjustment lock in the uppermost position according to the manufacturer's instructions. If a quick release mechanism is used (that is, no tools required), the maximum force used to close the quick release shall not exceed 15 lbf (67 N) when applied to a point ¼ in. (6 mm) from the end of the lever.

7.3.2 Apply a static 100-lb (45-kg) load in compression to the center top of the handlebar gradually over a period of 5 s and maintain for 10 s.

7.4 *Handle/Stem Fatigue Test:*

7.4.1 Secure the deck of the scooter so that it cannot move and the front wheel so that it cannot rotate about its steering axis.

7.4.2 Apply a 60-lb (267 N) total force 1 in. (2.5 cm) from the ends of both hand grips in the upward/rearward direction, 45° from vertical, then in the opposite (downward/forward) direction.

7.4.3 Repeat 7.4.2 for 5000 cycles, not to exceed 1 cycle per second.