



# Standard Consumer Safety Specification for Recreational Powered Scooters and Pocket Bikes<sup>1</sup>

This standard is issued under the fixed designation F2641; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## INTRODUCTION

During the period from July 1, 2003 through June 30, 2004, the U.S. Consumer Product Safety Commission (CPSC) staff estimates that there were 10 015 emergency-room-treated injuries related to powered scooters. In addition, CPSC received reports of 49 deaths attributed to powered scooters from October 1998 through November 2004. These losses are described in “Powered Scooter Special Study” 7/1/03-6/30/04 dated April 2005.

## 1. Scope

1.1 This consumer safety specification covers the establishment of performance requirements and corresponding test methods used to minimize the hazards to users of recreational powered scooters and pocket bikes.

1.2 This specification is intended to cover use of these products for children:

1.2.1 Age eight to twelve for units limited to speeds 16 km/h (10 miles/h) or less.

1.2.2 Age 13 and above for fast-moving units capable of achieving speeds >16 km/h (>10 miles/h).

1.3 This consumer safety specification is not intended for units designed or licensed for roadway use regulated by transportation regulations (Department of Transportation (DOT) or state).

1.4 This specification is not intended for units designed and sold as “Adult Use Only” and are prominently labeled and marked as such.

1.5 This consumer safety specification is not intended for nonpowered scooters (Consumer Safety Specification F2264), battery powered ride-on toys (Consumer Safety Specification F963), skateboards, motorcycles, all-terrain vehicles, go-carts (Practice F2007), fun-karts (Specification F2011), snowmobiles, motorized trail bikes, lawnmowers, or motorized wheelchairs including mobility scooters.

1.6 No product covered by this specification produced after the approval date of this consumer safety specification shall, by

label, marking, or other means, indicate compliance with this consumer safety specification unless it conforms to all requirements herein.

1.7 The values given in SI units are to be regarded as the standard. The values in parentheses are for information only.

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:<sup>2</sup>

D3359 Test Methods for Measuring Adhesion by Tape Test

F963 Consumer Safety Specification for Toy Safety

F2007 Practice for Design, Manufacture, and Operation of Concession Go-Karts and Facilities

F2011 Specification for Safety and Performance of Fun-Karts

F2264 Consumer Safety Specification for Non-Powered Scooters

### 2.2 ANSI Standard:<sup>3</sup>

ANSI/OPEI B71.1 Consumer Turf Care Equipment—Walk-Behind Mowers and Ride-On Machines with Mowers—Safety Specifications

### 2.3 SAE Standard:<sup>4</sup>

SAE J386 Operator Restraint Systems for Off-Road Work Machines

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

<sup>3</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

<sup>4</sup> Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001, <http://www.sae.org>.

<sup>1</sup> This consumer safety specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.58 on Powered Scooters & Skateboards.

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2.4 *Federal Standards*:<sup>5</sup>

16 CFR 1303 Lead Containing Paints

Federal Hazardous Substance Act (FHSA) and regulations promulgated under this act

### 3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *accelerator system, n*—mechanical system that is used to control the throttle position.

3.1.2 *axle guard, n*—device that covers the drive axle so that the possibility of injury resulting from hand, hair, body parts or loose clothing contacting the axle is reduced.

3.1.3 *conspicuous, adj*—label or marking that is visible when the unit is assembled.

3.1.4 *deck, n*—generally, low horizontal platform upon which the user places one or both feet.

3.1.5 *deck plate, n*—form of guarding through the use of relatively flat barriers to cover rotating components.

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

3.1.7 *locking fastener, n*—includes prevailing torque locknuts, cotter pins, serrated surface lock nuts, pal nuts, safety wire, and similar hardware intended to prevent unintended loosening when properly used.

3.1.8 *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 unit is unassembled (completely or partially) or folded and positions that the manufacturer shows or explains as being unacceptable, unsafe, or not recommended.

3.1.9 *motor stop switch, n*—toggle switch, or other two-position positively engaging switch, that, when activated, causes the motor to stop, not operate or both.

3.1.10 *pocket bike, n*—motorized two-wheel vehicle designed for a single occupant in the seated position typically designed to look like a motorcycle but scaled down to one quarter to one half the size of a typical motorcycle and not intended for use on public roads.

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

3.1.12 *scooter, n*—vehicle that has two or more wheels, a low platform, a vertical element for the user to grasp, and a method of steering.

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

3.1.14 *throttle stop, n*—device used to limit the travel of the throttle control.

3.1.15 *unit, n*—any of the items listed in 1.1.

### 4. General Requirements

4.1 Before testing, the units shall be completely assembled, unless otherwise noted, in accordance with the manufacturer's instructions.

4.2 The unit or segment to be tested shall be in a room with an ambient temperature of  $23 \pm 5^\circ\text{C}$  ( $73 \pm 9^\circ\text{F}$ ) for at least 1 h before testing.

4.3 All testing required by this consumer safety specification shall be conducted on the same unit unless otherwise specified.

4.4 All components tested under Section 6 shall not show any evidence of permanent deformation, material separation, visible cracking, or component failure that presents a hazard to the user.

4.5 The unit shall conform to 16 CFR 1303 and the Federal Hazardous Substance Act (FHSA) both before and after all testing.

4.6 All exposed parts shall be smooth and free of splinters, spurs, burrs, and sharp edges.

4.7 Units shall meet the specific requirements of Section 5.

### 5. Specific Requirements

5.1 *Brakes*—Units shall meet the dynamic brake test specified in 6.2. Hand brake levers shall be located on the handlebars in a position that is readily accessible to the rider in the recommended use position. Hand brake levers shall have a maximum reach (dimension between the hand brake lever(s) and the handle bars) of not more than 89 mm (3.5 in.) at any point between the pivot point of the lever and the lever midpoint. At no point along the lever shall the grip dimension exceed 102 mm (4 in.). An operating force of equal to or less than 44.5 N (10 lbf) applied to the hand lever at a point 25 mm (1.0 in.) from the open end of the hand lever shall cause the brake to begin its retarding function.

5.2 *Electrical Systems:*

5.2.1 All vented batteries shall have a vent tube, which is pointed downwards and extends below the bottom of the battery. The battery end of the vent tube shall be attached securely to the battery. The drain end of the vent tube shall be secured within 25 mm (1 in.) of the end of the tube.

5.2.2 All positively charged electrical connections at battery shall have insulated coverings.

5.2.3 Units that are designed for children eight to twelve shall not exceed 36 V nominal.

5.2.4 Chargers shall be UL or equivalent listed for use as battery chargers.

5.2.5 Unit shall have charger connect-interlock so that the unit cannot be activated when the charger is plugged in.

5.2.6 Controllers shall have the following protections:

5.2.6.1 Brake activation cutoff to cut off power when brake is applied.

5.2.6.2 *Field-Effect Transistor (FET) Short Sensing*—Controller shall be able to compare power transistor versus

<sup>5</sup> 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>.