SLOVENSKI STANDARD
SIST EN 14619:2015

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Nadomešča:
SIST EN 14619:2005

Oprema za športe na koleščkih - Skiroji s poganjanjem - Varnostne zahteve in preskusne metode

Roller sports equipment - Kick scooters - Safety requirements and test methods

Rollsportgeräte - Kick-Scooter - Sicherheitstechnische Anforderungen und Prüfverfahren

Equipement de sports à roulettes - Trottinettes - Exigences de sécurité et méthodes d'essais

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ICS:

97.220.40	Oprema za športe na prostem in vodne športe	Outdoor and water sports equipment

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EUROPEAN STANDARD

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English Version

Roller sports equipment - Kick scooters - Safety requirements and test methods

Équipement de sports à roulettes - Trottinettes - Exigences de sécurité et méthodes d'essai

Rollsportgeräte - Kick-Scooter - Sicherheitstechnische Anforderungen und Prüfverfahren

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 14619:2015) has been prepared by Technical Committee CEN/TC 136 “Sports, playground and other recreational facilities and equipment”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2015, and conflicting national standards shall be withdrawn at the latest by October 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 14619:2004.

In relation to EN 14619:2004 the following main amendments have been made:

a) the Scope has been changed;

b) classification of kick scooters has been added and the requirements have been modified accordingly;

c) requirement that the ends of the handles shall be covered has been added;

d) requirements for the marking on the kick scooter have been modified;

e) requirement for the marking on the packing the maximum weight has been added;

f) an informative annex regarding environmental aspects has been added;

g) a Bibliography has been added.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard applies to kick scooters which can only be propelled by the muscular activity of a user with a body mass of more than 20 kg and less than 100 kg.

It specifies safety requirements, test methods, marking and information supplied by the manufacturer to reduce the risk of injuries to both third parties and the user during normal use.

Kick scooters for use by users of less than 20 kg do not belong to the scope of this European Standard. They are toys.

It should be noted that there are two types of scooters for the weight group 20 kg to 50 kg – those classified as sports equipment for use on public roads and path ways (this European Standard) and those classified as toys for domestic use (according to EN 71-1).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 71-1:2014, *Safety of toys — Part 1: Mechanical and physical properties*

EN 22768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
kick scooter
ride-on equipment comprising at least one deck, at least two wheels of any size, a vertical element to grasp and a mechanism for steering, intended for flat, clean and dry surfaces

3.2
sliding mechanism
sliding components that can be used to vary the height of the steering column or the length of the deck

4 Construction

4.1 General

General tolerances: EN 22768-1 — v

Unless stated otherwise, accuracy tolerances based on the nominal values shall be as follows:

— Forces and torques 0/+5 %

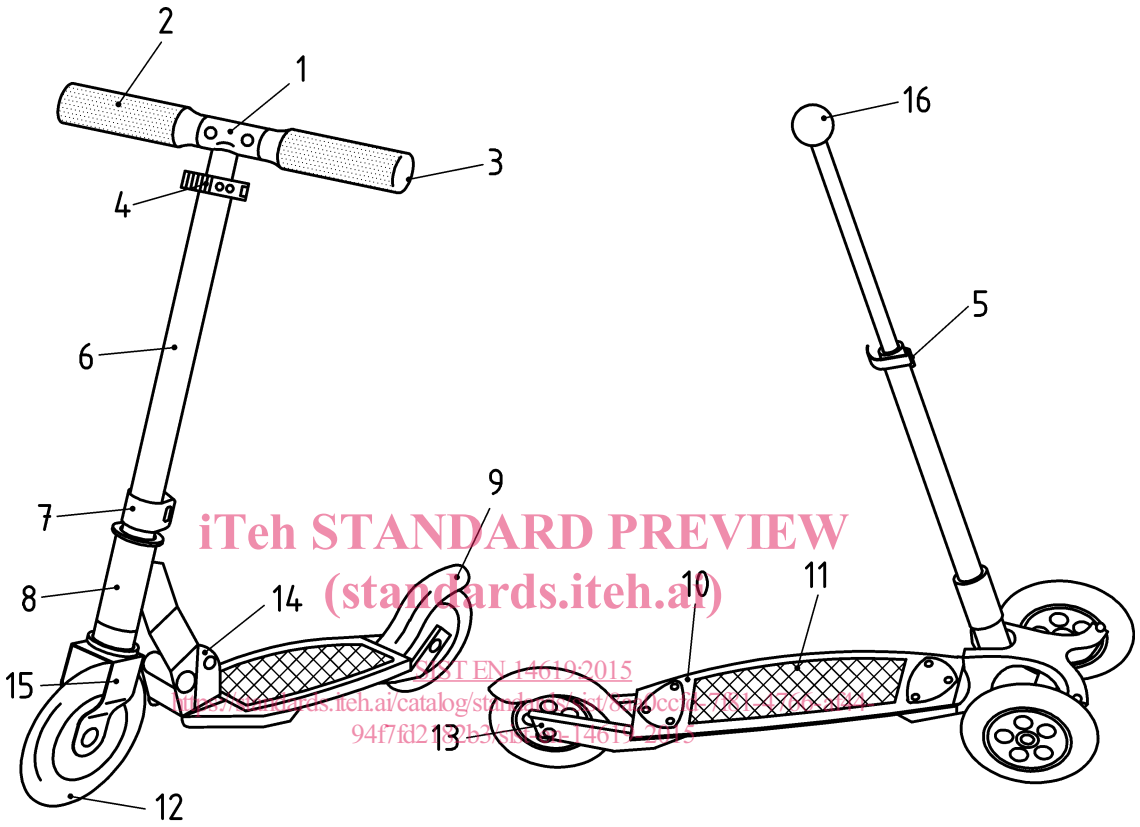
— Masses and weights ± 1 %

— Time duration ± 5 s

— Temperatures ± 2 °C

Typical components of kick scooters are illustrated in Figure 1.

NOTE 1 Figure 1 shows only examples for reference.



a) b)

Key

1	handlebar	9	brake
2	hand grip	10	deck
3	plug	11	deck grip
4	clamp	12	wheel
5	clamp	13	axle
6	steering column	14	folding mechanism
7	clamp	15	wheel support system
8	head tube	16	joy stick
a)	Example 1		
b)	Example 2		

Figure 1 — Typical components of kick scooters

NOTE 2 Restrictions on the marketing and use of certain dangerous substances and preparations are addressed in the Regulation (EC) No. 1907/2006.

4.2 Classification of kick scooters

4.2.1 Class A

Kick scooters intended for use by a user mass of more than 20 kg up to 100 kg.

4.2.2 Class B

Kick scooters intended for use by a user mass of more than 20 kg up to 50 kg. The maximum height of the steering column is 80 cm.

4.3 Requirements

4.3.1 Protruding components and edges

All protruding components and edges on the kick scooter that can come into contact with body parts during normal use shall be deburred or constructed in such a way as to prevent injury. The test shall be carried out according to 5.8.

Rigid and protruding parts that may cause entrapment or injuries shall be protected. This protection shall not come loose during tests performed according to Clause 5.

The ends of the handles shall be covered. To prevent from injuries, ends of handlebar have to withstand the test according to 5.4, Figure 3, and remain free of sharp edges.

4.3.2 Parts moving against each other

4.3.2.1 General

The requirements specified in 4.3.2.2 to 4.3.2.5 shall be tested according to 5.8.

4.3.2.2 Distance between the parts

4.3.2.2.1 General

Below requirements do not have to be considered if the customer acts intentionally close to and directly on the component and hurts himself. Then the injury would be caused by his own strength and could be stopped by himself immediately.

4.3.2.2.2 Class A

The distance between accessible moveable parts shall be either smaller than 5 mm or wider than 18 mm in any position. This requirement does not apply to the wheels/spokes/wheel support system or the braking/rear brake system, if provided.

4.3.2.2.3 Class B

a) The space between moving elements, capable of injuring fingers, shall also allow a 12 mm rod to be inserted if it allows a 5 mm rod to be inserted.

b) Accessible openings in moving elements capable of shearing a finger shall not allow the insertion of a 5 mm rod.

This requirement does not apply to the wheels/spokes/wheel support system or the braking/rear brake system, if provided.

4.3.2.3 Folding mechanism

Any folding mechanism shall be designed to fix the kick scooter for use in a simple, rigid and safe way. It shall resist all tests without damage. Fixing components should not have contact with the front wheel in any position. An inadvertent unlocking of the mechanism shall be impossible.

If the distance as specified in 4.3.2.2 is not met, other designs to protect the user from unintentional injuries shall be provided.

4.3.2.4 Sliding mechanism others than the steering system

Sliding mechanisms shall be protected against unintentional opening or collapse during normal use.

4.3.2.5 Springs

Springs shall not be accessible if the gap between two consecutive spirals or turns allows a 5 mm diameter rod to be inserted on a 10 mm depth.

4.3.3 Steering system

The steering system shall be constructed:

a) to avoid contact between wheels and other parts of the kick scooter during usual riding;

b) that the length adjustment fixing avoids unintentional opening;

1) For class B, the height shall be adjustable with the use of a tool or have at least one main locking device and one secondary locking device of which at least one shall automatically be engaged when the height is adjusted.

c) that the steering column, if it is sliding, shall be adjusted for height, and have a permanent mark that indicates the minimum insertion depth of the column; this mark shall be positioned at a distance equivalent to and not less than two and a half times the diameter of the column and shall not affect its strength;

d) that the end of the handlebar is equipped with hand grips or plugs, which withstand a tensile load of 70 N in the loosening direction.

When tested according to Clause 5, there shall be no break or functional damage of the steering system.

4.3.4 Deck

The deck shall resist all tests specified in Clause 5 without any functional damage. It shall be equipped with an anti-slide surface with an area of at least 200 cm^2.

4.3.5 Bearings

The bearings shall be designed in such a way as to be functional after performing all the tests according to Clause 5. They shall be constructed in such a way as to permit servicing according to the information supplied by the manufacturer without impairment of their operational safety.

4.3.6 Axles

The axles shall be attached and designed in such a way as to ensure that they cannot become loose, displaced or deformed during use. The wheels shall be secured on the axles against unintentional loosening. These requirements are considered to be fulfilled if the axles are not loosened, deformed or displaced to such

an extent as to impair proper functioning, and the wheels have not become loose after the tests according to Clause 5.

4.3.7 Wheels

The wheels shall be constructed from non-slip material. This requirement is considered to be fulfilled if a coefficient of adhesion, μ_0, of at least 0,30 is achieved in the test according to 5.3.

After the tests according to Clause 5, the wheels shall not show tearing. They shall not have further loosened or been deformed to the extent that there exists a risk of their becoming locked.

If a rear wheel and its axle differ from those at the front, they shall be tested according to 5.7 in an adapted way.

The diameter of the front wheel(s) on class B kick scooters shall be 120 mm or greater.

4.3.8 Self-locking fixings

Where self-locking nuts are used, the entire thread, including the locking section, shall be in contact with the bolt. Self-locking nuts and other self-locking fixings that are loosened several times for the purpose of modification or servicing shall be suitable for this purpose.

4.3.9 Mechanism to reduce the speed

If a kick scooter is equipped with a mechanism to reduce the speed, this mechanism shall continue to make contact with the surface to which it is intended and no fasting devices shall have loosened when tested according to Clause 5.

The mechanism shall effectively and smoothly reduce the speed without coming to an abrupt stop.

4.3.10 Strength

All functional parts after testing according to Clause 5 shall not collapse or fail to comply with the relevant requirements specified in this European Standard.

5 Test methods

5.1 General

The kick scooter to be tested shall be assembled and adjusted according to the information supplied by the manufacturer.

Two test specimens (two kick scooters) of the same type shall be tested according to the order described in 5.2.

5.2 Order of tests

5.2.1 Specimen A

The specimen shall be subjected to the test in the following order:

a) test of external finish (see 5.9);

b) wheel adhesion test (see 5.3);

c) endurance test (see 5.8).

5.2.2 Specimen B

The specimen shall be subjected to the test in the following order:

a) static load test of the deck (see 5.5.1);

b) static load test of the steering column (see 5.5.2);

c) drop test (see 5.6);

d) impact test against front wheel (see 5.7).

5.3 Wheel adhesion test

The wheel adhesion shall be tested by pulling a clean(ed) wheel along a steel plate with a fine brushed and degreased surface of arithmetical mean roughness R_a of 1,5 µm to 2,0 µm (see Figure 2).

A vertical force F_1 of 100 N shall be applied to the wheel which is moved along the steel plate perpendicular to the kick scooter's longitudinal axis and perpendicular to the surface brush direction by a horizontal force F_2, applied at the height of the wheel's axis. The maximum force shall be recorded. The test shall be repeated 10 times and the mean value of F_2 shall be calculated. The test shall be carried out at a speed of approximately 1 mm/s.

The coefficient of adhesion shall be calculated according to Formula (1):

$$\mu_0 = \frac{F_2}{m_E \cdot g + F_1} \quad (1)$$

where

μ_0 is the coefficient of adhesion;

F_1 is the load applied to wheel, in N;

F_2 is the adhesive force, in N;

m_E is the mass of the wheel, in kg;

g is the standard acceleration due to gravity (g = 9,81 m/s^2).

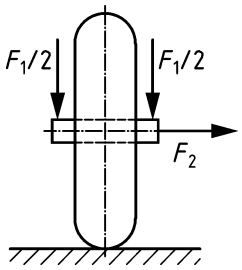


Figure 2 — Adhesion of wheels