



SLOVENSKI STANDARD

oSIST prEN ISO 8098:2022

01-januar-2022

Kolesa - Varnostne zahteve za kolesa za mlajše otroke (ISO/DIS 8098:2021)

Cycles - Safety requirements for bicycles for young children (ISO/DIS 8098:2021)

Fahrräder - Sicherheitstechnische Anforderungen an Kinderfahrräder (ISO/DIS 8098:2021)

Cycles - Exigences de sécurité relatives aux bicyclettes pour jeunes enfants (ISO/DIS 8098:2021)

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Ta slovenski standard je istoveten z: prEN ISO 8098

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ICS:

43.150	Kolesa	Cycles
97.190	Otroška oprema	Equipment for children

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Cycles — Safety requirements for bicycles for young children

Cycles — Exigences de sécurité relatives aux bicyclettes pour jeunes enfants

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ISO/CEN PARALLEL PROCESSING



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 149, *Cycles*, Subcommittee SC 1, *Cycles and major sub-assemblies*.

This fourth edition cancels and replaces the third edition (ISO 8098:2014), which has been technically revised.

The main changes compared to the previous edition are as follows:

— xxx xxxxxxxx xxx xxxx

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

ISO/DIS 8098:2021(E)**Introduction**

This International Standard has been developed in response to demand throughout the world, and the aim has been to ensure that bicycles manufactured in compliance with it will be as safe as is practically possible. The tests have been designed to ensure the strength and durability of individual parts as well as of the bicycle as a whole, demanding high quality throughout and consideration of safety aspects from the design stage onwards.

The scope has been limited to safety considerations, and has specifically avoided standardization of components.

If the bicycle is to be used on public roads, national regulations apply.

For safety requirements for toy bicycles intended for very young children see national regulations and standards.

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Cycles — Safety requirements for bicycles for young children

1 Scope

This International Standard specifies safety and performance requirements and test methods for the design, assembly and testing of fully assembled bicycles and sub-assemblies for young children. It also provides guidelines for instructions on the use and care of the bicycles.

This International Standard is applicable to bicycles with a maximum saddle height of more than 435 mm and less than 635 mm, propelled by a transmitted drive to the rear wheel.

It is not applicable to special bicycles intended for performing stunts (e.g. BMX bicycles).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1101, *Geometrical product specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out* (standards.iteh.ai)

ISO 5775-1, *Bicycle tyres and rims — Part 1: Tyre designations and dimensions*

ISO 5775-2, *Bicycle tyres and rims — Part 2: Rims*

ISO 6742-2, *Cycles — Lighting and retro-reflective devices — Part 2: Retro-reflective devices*

ISO 8124-1, *Safety of toys — Part 1: Safety aspects related to mechanical and physical properties*

ISO 11243, *Cycles — Luggage carriers for bicycles — Requirements and test methods*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

bicycle

two-wheeled vehicle that is propelled solely or mainly by the muscular energy of the person on that vehicle, in particular by means of pedals

3.2

brake-lever

lever that operates a braking device

3.3

conventional brake-lever

brake-lever with a rotational axis perpendicular to the handlebar

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3.4**parallel brake-lever**

brake-lever with rotational axis parallel to the handlebar

3.5**braking force**

tangential rearward force between the tyre and the ground or the tyre and the drum or belt of the test machine

3.6**crank assembly**

assembly consisting of the drive side and the nondrive side crank arm the bottom-bracket spindle or crank spindle, and all component of the drive system that are affixed to the crankset

3.7**cycle**

any vehicle that has at least two wheels and is propelled solely or mainly by the muscular energy of the person on that vehicle, in particular by means of pedals

3.8**exposed protrusion**

protrusion which through its location and rigidity could present a hazard to the rider either through heavy contact with it in normal use or should the rider fall onto it in an accident

3.9**fracture**

unintentional separation into two or more parts

3.10**highest gear**

gear ratio which gives the greatest distance travelled for one rotation of the cranks

3.11**lowest gear**

gear ratio which gives the shortest distance travelled for one rotation of the cranks

3.12**maximum inflation pressure**

maximum tyre pressure recommended by the tyre or rim manufacturer for a safe and efficient performance, and if the maximum rim pressure was marked on both the tyre and rim, maximum tyre pressure according to the lower marked maximum inflation pressure on the rim or tyre

3.13**maximum saddle height**

vertical distance from the ground to the point where the top of the seat surface is intersected by the seat-post axis, measured with the seat in a horizontal position and with the seat-post set to the minimum insertion-depth mark

3.14**pedal tread surface**

surface of a pedal that is presented to the underside of the foot

3.15**quick-release devices**

lever actuated mechanism that connects, retains, or secures a wheel or any other component

3.16**stabilizers**

removable auxiliary wheels fitted to enable the rider to balance

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3.17**toe-clip**

device attached to the pedal to grip the toe end of the rider's shoe but permitting withdrawal of the shoe

3.18**toe-strap**

device to securely locate a rider's shoe on a pedal

3.19**visible crack**

crack which results from a test where that crack is visible to the naked eye

4 Requirements and test methods**4.1 Brake tests and strength tests — Special requirements****4.1.1 Definition of brake tests**

Brake tests to which accuracy requirements apply, as in 4.1.4, are those specified in 4.7.2.3 to 4.7.8.4 inclusive.

4.1.2 Definition of strength tests

Strength tests to which accuracy requirements apply, as in 4.1.4, are those involving static, impact or fatigue loading as specified in 4.8 to 4.14 inclusive and 4.16.

4.1.3 Numbers and condition of specimens for the strength tests

In general, for static, impact and fatigue tests, each test shall be conducted on a new test sample, but if only one sample is available, it is permissible to conduct all of the tests on the same sample with the sequence of testing being fatigue, static and impact.

When more than one test is conducted on the same sample, the test sequence shall be clearly recorded in the test report or record of testing.

NOTE It should be noted that if more than one test is conducted on the same sample, earlier test can influence the results of subsequent tests. Also, if a sample fails when it has been subjected to more than one test, a direct comparison with single testing is not possible.

In all strength tests, specimens shall be in the fully finished condition.

It is permitted to carry out tests with dummy assemblies such as a fork or handlebar when carrying out frame or handlebar stem tests.

4.1.4 Tolerances

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

- Forces and torques: 0/+5 %
- Masses and weights: ± 1 %
- Dimensions: ± 1 mm
- Angles: $\pm 1^\circ$

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- Time duration: ± 5 s
- Temperatures: ± 2 °C
- Pressures: ± 5 %

4.1.5 Fatigue test

The force for fatigue tests is to be applied and released progressively, not to exceed 10 Hz. The tightness of fasteners according to manufacturer's recommended torque can be re-checked not later than 1 000 test cycles to allow for the initial settling of the component assembly. (This is considered applicable to all components, where fasteners are present for clamping.) The test bench shall be qualified to meet dynamic requirements of [4.1.4](#).

NOTE Examples of suitable methods are listed in Reference [\[Z\]](#) in the Bibliography.

4.1.6 Plastic material test ambient temperature

All strength tests involving any plastic materials shall be pre-conditioned for two hours and tested at an ambient temperature of $23\text{ °C} \pm 5\text{ °C}$.

4.1.7 Impact test

For all vertical impact test, the striker shall be guided in such a way that the efficiency will allow a value of at least 95 % of the free velocity.

NOTE See [Annex B](#).

4.2 Toxicity

Any items which come into intimate contact with the rider (i.e. causing any hazard due to sucking or licking) shall comply with national regulations specific to children's products.

4.3 Sharp edges

Exposed edges that could come into contact with the rider's hands, legs etc., during normal riding or normal handling and normal maintenance shall not be sharp, e.g. deburred, broken, rolled or processed with comparable techniques.

4.4 Security and strength of safety-related fasteners**4.4.1 Security of screws**

Any screws used in the assembly of suspension systems, bracket attached electric generators, brake-mechanisms and mud-guards to the frame or fork, shall be provided with suitable locking devices to prevent unintentional loosening, e.g. lock-washers, lock-nuts, thread locking compound or stiff nuts.

Fasteners used to assemble hub and disc brakes should have heat-resistant locking devices.

NOTE The screws used to attach hub-generator are not included.

4.4.2 Minimum failure torque

The minimum failure torque of bolted joints for the fastening of handlebars, handlebar-stems, bar-ends, saddles and seat-posts shall be at least 20 % greater than the manufacturer's maximum recommended tightening torque.

4.4.3 Quick-release devices

Quick-release devices shall not be fitted.

NOTE This requirement does not apply to the seat-tube clamp.

4.4.4 Foot location devices

Toe-straps and toe-clips shall not be fitted.

4.4.5 Folding bicycle mechanism

If folding bicycles mechanism is provided, it shall be designed so that the bicycle can be locked for use in a simple, stable, safe way and when folded no damage shall occur to any cables. No locking mechanism shall contact the wheels or tyres during riding, and it shall be impossible to unintentionally loosen or unlock the folding mechanisms during riding.

4.5 Crack detection methods

Standardised methods should be used to emphasize the presence of cracks where visible cracks are specified as criteria of failure in tests specified in this International Standard.

NOTE For example, suitable dye-penetrant methods are specified in ISO 3452 (all parts)^{[2][3][4][5]}.

4.6 Protrusions iTeh STANDARD PREVIEW

These requirements are intended to address the hazards associated with the users of bicycles falling on projections or rigid components (e.g. handlebars, levers) on a bicycle possibly causing internal injury or skin puncture.

Tubes and rigid components in the form of projections which constitute a puncture hazard to the user should be protected. The size and shape of the end protection has not been stipulated, but an adequate shape shall be given to avoid puncturing of the body. Screw threads which constitute a puncture hazard shall be limited to a protrusion length of one major diameter of the screw beyond the internally threaded mating part.

4.7 Brakes

4.7.1 Braking-systems

Bicycles, whether or not fitted with a fixed transmitted drive, shall be equipped with at least two independently actuated braking systems, one system operating on the front wheel and one on the rear. The decision on whether the rear braking system is operated by the rider's hand or foot should be made in accordance with the legislation, custom or preference of the country to which the bicycle is to be supplied.

Brake-blocks containing asbestos shall not be permitted.

4.7.2 Hand-operated brakes

4.7.2.1 Brake-lever position

The brake-levers for front and rear brakes shall be positioned according to the legislation or custom and practice of the country in which the bicycle is to be sold, and the bicycle manufacturer shall state in the users instruction manual which lever operates the front brake and which operates the rear brake, see also [Clause 5 b\)](#).

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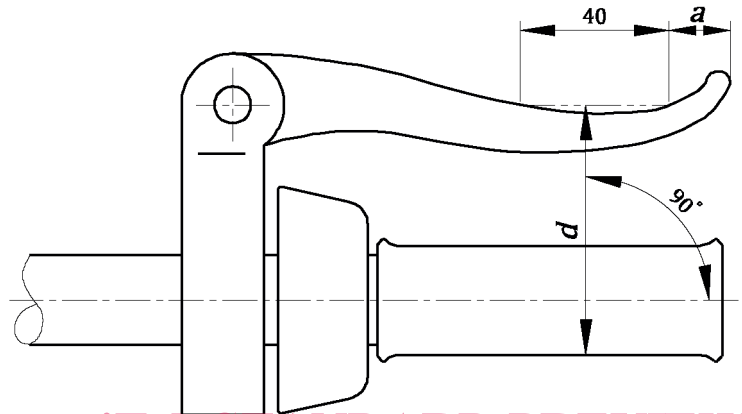
4.7.2.2 Brake-lever grip dimensions

4.7.2.2.1 Requirement

The maximum grip dimension, d , measured between the outer surfaces of the brake-lever and the handlebar, or the handlebar-grip or any other covering where present, shall not exceed 75 mm over a distance of 40 mm as shown in [Figure 1](#). For dimension a see [4.7.2.2.2](#).

The brake-lever may be adjusted to permit these dimensions to be obtained.

Dimension in millimetres



Key

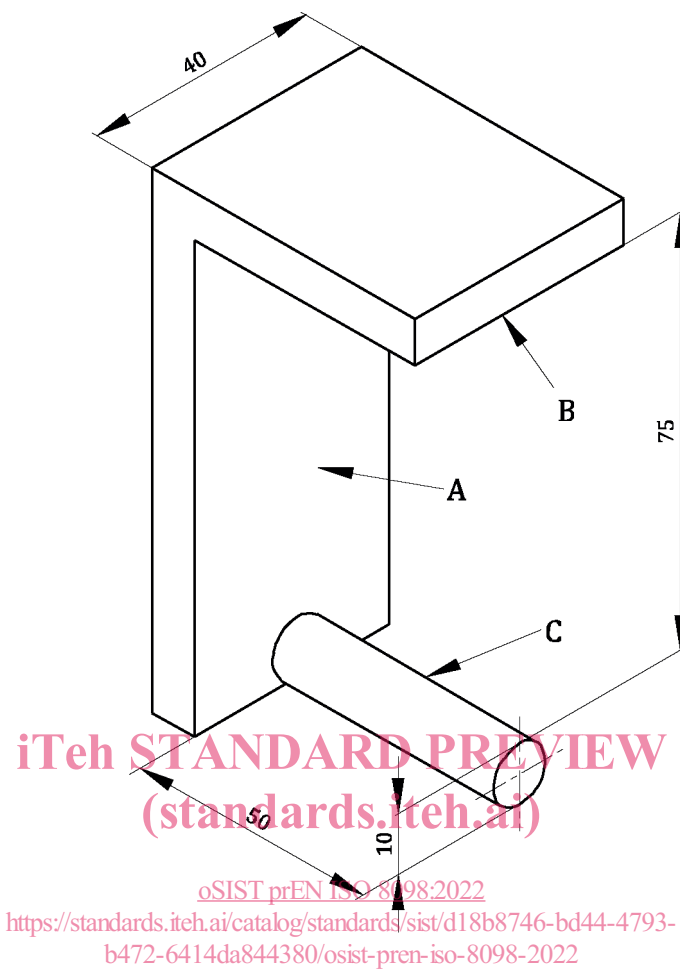
- a distance between the last part of the lever intended for contact with the rider's fingers and the end of the lever
 d brake-lever grip dimension

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Figure 1 — Brake-lever grip dimensions

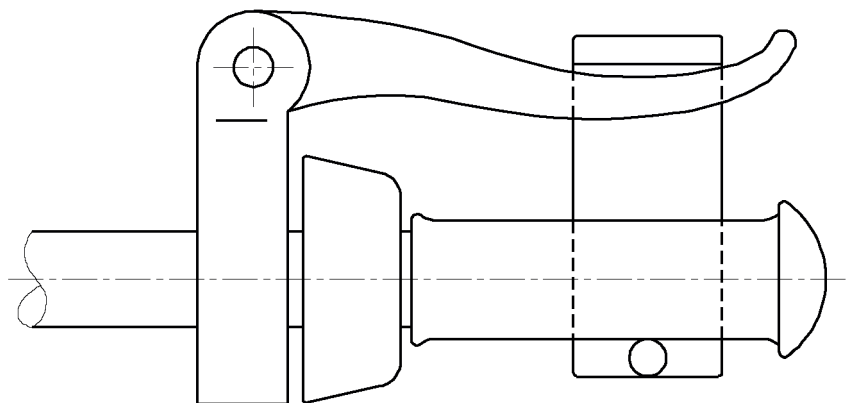
4.7.2.2.2 Test method

Fit the gauge illustrated in [Figure 2](#) over the handlebar and handlebar-grip and the brake-lever as shown in [Figure 3](#) so that the face A is in contact with the handlebar grip and the side of the brake-lever. Ensure that the face B is in uninterrupted contact with the part of the brake-lever which is intended for contact with the rider's fingers and that the gauge does not cause any movement of the brake-lever towards the handlebar or handlebar-grip. Measure the distance a , the distance between the last part of the lever intended for contact with the rider's fingers and the end of the lever (see [4.7.2.2.1](#) and [4.7.2.3](#)).

Dimension in millimetres

**Key**

- A face A
- B face B
- C rod

Figure 2 — Brake-lever grip dimension gauge**Figure 3 — Method of fitting the gauge to the brake-lever and handlebar**