This document is a preview generated by EVS

Cycles - Safety requirements for bicycles for young children (ISO 8098:2023, Corrected version 2023-08)

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

This document is a preview generated by EVS

See Eesti standard EVS-EN ISO 8098:2023 sisaldab Euroopa standardi EN ISO 8098:2023 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 8098:2023 consists of the English text of the European standard EN ISO 8098:2023.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.01.2023.	Date of Availability of the European standard is 18.01.2023.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 43.150, 97.190

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis-ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis-ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 8098

January 2023

ICS 43.150; 97.190

Supersedes EN ISO 8098:2014

English Version

Cycles - Safety requirements for bicycles for young children (ISO 8098:2023, Corrected version 2023-08)

Cycles - Exigences de sécurité pour les bicyclettes pour jeunes enfants (ISO 8098:2023, Version corrigée 2023-08)

Fahrräder - Sicherheitstechnische Anforderungen an Kinderfahrräder (ISO 8098:2023, korrigierte Fassung 2023-08)

This European Standard was approved by CEN on 30 December 2022.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 30 August 2023.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

© 2023 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN ISO 8098:2023 E

This document is a preview generated by EVS

European foreword

This document (EN ISO 8098:2023) has been prepared by Technical Committee ISO/TC 149 "Cycles" in collaboration with Technical Committee CEN/TC 333 “Cycles” the secretariat of which is held by UNI.

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 July 2023, and conflicting national standards shall be withdrawn at the latest by July 2024.

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

This document supersedes EN ISO 8098:2014.

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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

Endorsement notice

The text of ISO 8098:2023, Corrected version 2023-08 has been approved by CEN as EN ISO 8098:2023 without any modification.

This document is a preview generated by EVS

Contents

Page

Foreword ..... **v**
Introduction ..... **vii**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Requirements and test methods **3**
4.1 Brake tests and strength tests — Special requirements 3
4.1.1 Brake tests to which special requirements apply 3
4.1.2 Strength tests to which special requirements apply 3
4.1.3 Numbers and condition of specimens for the strength tests 3
4.1.4 Tolerances 4
4.1.5 Fatigue test 4
4.1.6 Plastic material test ambient temperature 4
4.1.7 Impact test 4
4.2 Toxicity 4
4.3 Sharp edges 5
4.4 Security and strength of safety-related fasteners 5
4.4.1 Security of screws 5
4.4.2 Minimum failure torque 5
4.4.3 Quick-release devices 5
4.4.4 Foot location devices 5
4.4.5 Folding bicycle mechanism 5
4.5 Crack detection methods 5
4.6 Exposed protrusions 5
4.7 Brakes 6
4.7.1 Braking-systems 6
4.7.2 Hand-operated brakes 6
4.7.3 Attachment of brake assembly and cable requirements 8
4.7.4 Brake-block and brake-pad assemblies — Security test 9
4.7.5 Brake adjustment 9
4.7.6 Back-pedal brake 9
4.7.7 Braking-system — Strength tests 9
4.7.8 Braking performance 10
4.8 Steering 12
4.8.1 Handlebar — Dimensions and end fittings 12
4.8.2 Handlebar grips and end plugs 12
4.8.3 Handlebar-stem — Insertion depth mark or positive stop 14
4.8.4 Steering stability 14
4.8.5 Steering assembly — Static strength and security tests 14
4.8.6 Handlebar and stem assembly — Fatigue test 18
4.9 Frames 20
4.9.1 Frame and front fork assembly — Impact test (falling mass) 20
4.9.2 Frame and front fork assembly — impact test (falling frame) 21
4.10 Front fork 22
4.10.1 General 22
4.10.2 Front fork — Bending fatigue test 22
4.11 Wheel and tyre assembly 23
4.11.1 Wheel and tyre assembly — Rotational accuracy 23
4.11.2 Wheel and tyre assembly — Clearance 24
4.11.3 Wheel and tyre assembly — Static strength test 25
4.11.4 Wheels — Wheel retention 25
4.11.5 Tyre inflation pressure 26
4.11.6 Wheel and tyre assembly —Overpressure test 26

This document is a preview generated by EVS

© ISO 2023 – All rights reserved

4.12 Pedals and pedal/crank drive system 26
4.12.1 Pedal tread 26
4.12.2 Pedal clearance 27
4.12.3 Pedal — Impact test 27
4.12.4 Pedal/pedal-spindle — Dynamic durability test 28
4.12.5 Drive system static strength test 29
4.12.6 Crank assembly — Fatigue tests 30
4.13 Saddles and seat-posts 31
4.13.1 Limiting dimensions 31
4.13.2 Seat-post — Insertion-depth mark or positive stop 31
4.13.3 Saddle and seat-post security test 32
4.13.4 Saddle — Static strength test 32
4.13.5 Saddle and seat-post assembly fatigue test 33
4.14 Chain-wheel and belt-drive protective device 34
4.15 Stabilizers 35
4.15.1 Mounting and dismounting 35
4.15.2 Dimensions 35
4.15.3 Vertical load test 36
4.15.4 Longitudinal load test 36
4.16 Luggage carriers 37
4.17 Lighting systems and reflectors 37
4.17.1 Front and rear light 37
4.17.2 Reflectors 37
4.17.3 Wiring harness 38
4.18 Warning device 38

5 Instructions 38

6 Marking 39
6.1 Requirement 39
6.2 Durability test 40
6.2.1 Requirement 40
6.2.2 Test method 40

Annex A (informative) **Steering geometry 41**

Annex B (informative) **Verification of free fall velocity 42**

Bibliography 43

This document is a preview generated by EVS

© ISO 2023 – All rights reserved

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*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 333, *Cycles*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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

The main changes are as follows:

— addition of the terms "3.3 conventional brake-lever", "3.4 parallel brake-lever", and "3.19 wheel and tyre assembly";

— improvement of 4.4.2 Minimum failure torque;

— addition of 4.7.2.3.2 Parallel brake-lever;

— improvement of 4.8.1 Handlebar — Dimensions and end fittings;

— improvement of 4.8.2 Handlebar grips;

— "Wheels" and "Rims, tyres and tubes" are merged as "4.11 Wheels and tyre assembly";

— improvement of 4.11.2 Wheel and tyre assembly — Clearance;

— improvement of 4.12.6 Crank assembly — Fatigue tests;

— improvement of 4.14 Chain-wheel and belt-drive protective device.

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.

This corrected version of ISO 8098:2023 incorporates the following correction:

This document is a preview generated by EVS

© ISO 2023 – All rights reserved

— In 4.8.2.3, "of 100 N" has been added to the sentence.

This document is a preview generated by EVS

© ISO 2023 – All rights reserved

Introduction

This document has been developed in response to demand throughout the world, and the aim has been to ensure that bicycles manufactured in conformity 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 used on public roads, national regulations apply.

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

This document is a preview generated by EVS

© ISO 2023 – All rights reserved

Cycles — Safety requirements for bicycles for young children

This document is a preview generated by EVS

1 Scope

This document 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 document 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).

NOTE For bicycles with a maximum saddle height of 435 mm or less, see national regulations for ride-on toys, and with a maximum saddle height of 635 mm or more, see ISO 4210-1 to ISO 4210-9[5]-[13].

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*

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

ISO 8124-1:2018, *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 terminology 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

[SOURCE: ISO 4210-1:2023, 3.1.1]

3.2
brake-lever
lever that operates a braking device

[SOURCE: ISO 4210-1:2023, 3.4.2]

© ISO 2023 – All rights reserved