



BSI Standards Publication

Cycles — Safety requirements for bicycles for young children

National foreword

This British Standard is the UK implementation of EN ISO 8098:2023. It is identical to ISO 8098:2023. It supersedes BS EN ISO 8098:2014, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GME/25, Cycles.

A list of organizations represented on this committee can be obtained on request to its committee manager.

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2023
Published by BSI Standards Limited 2023

ISBN 978 0 539 04324 2

ICS 43.150; 97.190

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 January 2023.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

EUROPEAN STANDARD

EN ISO 8098

NORME EUROPÉENNE

EUROPÄISCHE NORM

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)

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

Fahrräder - Sicherheitstechnische Anforderungen an Kinderfahrräder (ISO 8098:2023)

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

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

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 2023.

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 has been approved by CEN as EN ISO 8098:2023 without any modification.

Contents

Page

Foreword.....	v
Introduction.....	vi
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

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

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.

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.

Cycles — Safety requirements for bicycles for young children

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]