

SLOVENSKI STANDARD

SIST EN ISO 4210-2:2023

01-april-2023

Nadomešča:

SIST EN ISO 4210-2:2015

Kolesa - Varnostne zahteve za kolesa - 2. del: Zahteve za mestna in trekking kolesa, kolesa za mlade, gorska in tekmovalna kolesa (ISO 4210-2:2023)

Cycles - Safety requirements for bicycles - Part 2: Requirements for city and trekking, young adult, mountain and racing bicycles (ISO 4210-2:2023)

Fahrräder - Sicherheitstechnische Anforderungen an Fahrräder - Teil 2: Anforderungen für City- und Trekkingfahrräder, Jugendfahrräder, Geländefahrräder (Mountainbikes) und Rennräder (ISO 4210-2:2023)

<https://standards.iteh.ai/catalog/standards/sist/e2490861-ce3f-4556-a5b4-1d920cc48180/iso-4210-2-2023>

Cycles - Exigences de sécurité pour les bicyclettes - Partie 2: Exigences pour bicyclettes de ville et tout chemin (trekking), jeunes adultes, tout-terrain et de course (ISO 4210-2:2023)

Ta slovenski standard je istoveten z: EN ISO 4210-2:2023

ICS:

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

SIST EN ISO 4210-2:2023

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 4210-2

January 2023

ICS 43.150

Supersedes EN ISO 4210-2:2015

English Version

**Cycles - Safety requirements for bicycles - Part 2:
Requirements for city and trekking, young adult, mountain
and racing bicycles (ISO 4210-2:2023)**

Cycles - Exigences de sécurité pour les bicyclettes -
Partie 2: Exigences pour bicyclettes de ville et tout
chemin (trekking), jeunes adultes, tout-terrain et de
course (ISO 4210-2:2023)

Fahrräder - Sicherheitstechnische Anforderungen an
Fahrräder - Teil 2: Anforderungen für City- und
Trekkingfahrräder, Jugendfahrräder, Geländefahrräder
(Mountainbikes) und Rennräder (ISO 4210-2:2023)

This European Standard was approved by CEN on 13 January 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

Contents	Page
European foreword.....	3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 4210-2:2023

<https://standards.iteh.ai/catalog/standards/sist/e2490861-ce3f-4556-a5b4-b54dfe416ce4/sist-en-iso-4210-2-2023>

European foreword

This document (EN ISO 4210-2:2023) 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 4210-2:2015.

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 4210-2:2023 has been approved by CEN as EN ISO 4210-2:2023 without any modification.

INTERNATIONAL STANDARD

ISO
4210-2

Third edition
2023-01

Cycles — Safety requirements for bicycles —

Part 2:

Requirements for city and trekking, young adult, mountain and racing bicycles

Cycles — Exigences de sécurité pour les bicyclettes —

*Partie 2: Exigences pour bicyclettes de ville et tout chemin (trekking),
jeunes adultes, tout-terrain et de course*

SIST EN ISO 4210-2:2023

<https://standards.iteh.ai/catalog/standards/sist/e2490861-ce3f-4556-a5b4-b54dfe416ee4/sist-en-iso-4210-2-2023>



Reference number
ISO 4210-2:2023(E)

© ISO 2023

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 4210-2:2023

<https://standards.iteh.ai/catalog/standards/sist/e2490861-ce3f-4556-a5b4-b54dfe416ce4/sist-en-iso-4210-2-2023>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2023

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	v
Introduction	vii
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Requirements	2
4.1 Toxicity	2
4.2 Sharp edges	2
4.3 Security and strength of safety-related fasteners	2
4.3.1 Security of screws	2
4.3.2 Minimum failure torque	2
4.3.3 Folding bicycle mechanism	2
4.4 Crack detection methods	3
4.5 Exposed protrusions	3
4.6 Brakes	3
4.6.1 Braking systems	3
4.6.2 Hand-operated brakes	3
4.6.3 Attachment of brake assembly and cable requirements	4
4.6.4 Brake-block and brake-pad assemblies — Security test	5
4.6.5 Brake adjustment	5
4.6.6 Hand-operated braking-system — Strength test	5
4.6.7 Back-pedal braking system — Strength test	5
4.6.8 Braking performance	5
4.6.9 Brakes — Heat-resistance test	8
4.7 Steering	8
4.7.1 Handlebar — Dimensions	8
4.7.2 Handlebar grips and plugs	9
4.7.3 Handlebar stem — Insertion-depth mark or positive stop	9
4.7.4 Handlebar stem to fork steerer — Clamping requirements	10
4.7.5 Steering stability	10
4.7.6 Steering assembly — Static strength and security tests	11
4.7.7 Handlebar and stem assembly — Fatigue test	12
4.8 Frames	12
4.8.1 Suspension-frames — Special requirements	12
4.8.2 Frame — Impact test (falling mass)	13
4.8.3 Frame and front fork assembly — Impact test (falling frame)	13
4.8.4 Frame — Fatigue test with pedalling forces	13
4.8.5 Frame — Fatigue test with horizontal forces	13
4.8.6 Frame — Fatigue test with a vertical force	13
4.8.7 Rear brake mount tests	14
4.9 Front fork	14
4.9.1 General	14
4.9.2 Means of location of the axle and wheel retention	14
4.9.3 Tyre clearance test — Suspension fork	14
4.9.4 Front fork — Tensile test	14
4.9.5 Front fork — Static bending test	14
4.9.6 Front fork — Rearward impact test	14
4.9.7 Front fork — Bending fatigue test plus rearward impact test	15
4.9.8 Forks intended for use with hub- or disc-brakes	15
4.9.9 Steerer tube — fatigue test	15
4.10 Wheels and tyre assembly	16
4.10.1 Wheels and tyre assembly — Rotational accuracy — Concentricity tolerance and lateral tolerance	16

ISO 4210-2:2023(E)

4.10.2	Wheel and tyre assembly — Clearance	16
4.10.3	Wheel and tyre assembly — Static strength test	16
4.10.4	Wheels — Wheel retention	16
4.10.5	Wheels — Quick-release devices — Operating features	17
4.10.6	Wheel and tyre assembly — Greenhouse effect test for composite wheels	17
4.10.7	Wheel and tyre assembly — Heat resistance tests for composite rims used in conjunction with rim brake	18
4.10.8	Wheel and tyre assembly — Overpressure test	18
4.10.9	Wheel and tyre assembly — Information for users	19
4.11	Front mudguard	19
4.12	Pedals and pedal/crank drive system	19
4.12.1	Pedal tread	19
4.12.2	Pedal clearance	20
4.12.3	Pedal — Static strength test	21
4.12.4	Pedal — Impact test	21
4.12.5	Pedal — Dynamic durability test	21
4.12.6	Drive system — Static strength test	21
4.12.7	Crank assembly — Fatigue test	22
4.13	Drive-chain and drive belt	22
4.13.1	Drive-chain	22
4.13.2	Drive belt	22
4.14	Chain-wheel and belt-drive protective device	22
4.14.1	Requirements	22
4.14.2	Chain-wheel disc and drive pulley disc diameter	23
4.14.3	Chain and drive belt protective device	24
4.14.4	Combined front gear-change guide	25
4.15	Saddles and seat-posts	25
4.15.1	Limiting dimensions	25
4.15.2	Seat-post — Insertion-depth mark or positive stop	25
4.15.3	Saddle/seat-post — Security test	26
4.15.4	Saddle and saddle rail — Static strength test	26
4.15.5	Saddle and seat-post assembly — Fatigue test	26
4.15.6	Seat-post — Fatigue test	26
4.16	Spoke protector	27
4.17	Luggage carriers	27
4.18	Road test of a fully assembled bicycle	27
4.19	Lighting systems and reflectors	27
4.19.1	General	27
4.19.2	Wiring harness	27
4.19.3	Lighting systems	28
4.19.4	Reflectors	28
4.20	Warning device	28
5	Manufacturer's instructions	28
6	Marking	30
6.1	Requirement	30
6.2	Durability test	31
	Annex A (informative) Steering geometry	32
	Bibliography	33

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 third edition cancels and replaces the second edition (ISO 4210-2:2015), which has been technically revised.

The main changes as follows:

- improvement of [4.3.2](#) Minimum failure torque;
- change in minimum braking performance value in [Table 2](#) of [4.6.8.1.3](#);
- improvement of [4.6.9](#);
- improvement of [4.7.2](#);
- addition of a requirement for angle-adjustable handlebar stem in [4.7.6.3](#);
- addition of [4.8.7](#);
- addition of [4.9.8.3](#);
- addition of [4.9.9](#);
- re-arrangement of requirements for “Wheel and tyre assembly”, “Rims, tyres, and tubes”;
- improvement of [4.10.2](#);
- change in test force of [4.10.4.3](#);
- addition of [4.10.7](#);

ISO 4210-2:2023(E)

- improvement of [4.11](#);
- change in option c) of [4.14](#);
- addition of [4.15.4.2](#);
- improvement of [4.15.6](#);
- addition of icons in [Clause 6](#).

A list of all parts in the ISO 4210 series can be found on the ISO website.

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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 4210-2:2023

<https://standards.iteh.ai/catalog/standards/sist/e2490861-ce3f-4556-a5b4-b54dfe416ee4/sist-en-iso-4210-2-2023>

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 this document 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.

For the purpose of improving the safety of luggage carriers, revision work of ISO 11243, referenced in [4.17](#), is in progress. In case this revision work involves requirements for the entire bicycle, this document will incorporate those requirements in the next revision.

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 4210-2:2023

<https://standards.iteh.ai/catalog/standards/sist/e2490861-ce3f-4556-a5b4-b54dfe416ce4/sist-en-iso-4210-2-2023>