



# SLOVENSKI STANDARD

## oSIST prEN ISO 4210-3:2022

01-januar-2022

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### Kolesa - Varnostne zahteve za kolesa - 3. del: Splošne preskusne metode (ISO/DIS 4210-3:2021)

Cycles - Safety requirements for bicycles - Part 3: Common test methods (ISO/DIS 4210-3:2021)

Fahrräder - Sicherheitstechnische Anforderungen an Fahrräder - Teil 3: Allgemeine Prüfverfahren (ISO/DIS 4210-3:2021)

Cycles - Exigences de sécurité pour les bicyclettes - Partie 3 : Méthodes d'essai communes (ISO/DIS 4210-3:2021)

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Ta slovenski standard je istoveten z: **prEN ISO 4210-3**

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#### ICS:

43.150

Kolesa

Cycles

**oSIST prEN ISO 4210-3:2022**

**en,fr,de**

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# DRAFT INTERNATIONAL STANDARD

## ISO/DIS 4210-3

ISO/TC 149/SC 1

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## Cycles — Safety requirements for bicycles —

### Part 3: Common test methods

*Cycles — Exigences de sécurité pour les bicyclettes —**Partie 3: Méthodes d'essai communes*

ICS: 43.150

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## ISO/DIS 4210-3:2021(E)

### 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](http://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](http://www.iso.org/patents)).

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This document was prepared by Technical Committee ISO/TC 149, *Cycles*, Subcommittee SC 1, *Cycles and major sub-assemblies*.  
oSIST prEN ISO 4210-3:2022

This **second** edition cancels and replaces the **first** edition (ISO 4210-3:2014), which has been technically revised.  
<https://standards.iteh.ai/catalog/standards/sist/010d5f48-1be9-4813-b04b->

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

— **xxx xxxxxxxx xxx xxx**

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](http://www.iso.org/members.html).

## Introduction

This International Standard was developed in response to a demand throughout the world. The aim is to ensure that bicycles manufactured in compliance with this International Standard will be as safe as is practically possible. The tests are 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 is limited to safety considerations, and has specifically avoided standardization of components.

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

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# 1 Cycles — Safety requirements for bicycles — Part 3: Common test 2 methods

## 3 1 Scope

4 This part of ISO 4210 specifies the common test methods for ISO 4210-2.

## 5 2 Normative references

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

9 ISO 4210-1, Cycles — *Safety requirements for bicycles — Part 1: Terms and definitions*

10 ISO 4210-2, Cycles — *Safety requirements for bicycles — Part 2: Requirements for city and trekking, young  
11 adult, mountain and racing bicycles*

12 ISO 4210-4, Cycles — *Safety requirements for bicycles — Part 4: Braking test methods*

## 13 3 Terms and definitions

14 For the purposes of this document, the terms and definitions given in ISO 4210-1 apply.

## 15 4 Test methods

### 16 4.1 Brake tests and strength tests

#### 17 4.1.1 Definition of brake tests

18 Brake tests to which accuracy requirements apply, as in 4.1.4, are those specified in ISO 4210-2, 4.6.3 to  
19 4.6.6, ISO 4210-4, 4.2, and ISO 4210-4, 4.6.3.3.

#### 20 4.1.2 Definition of strength tests

21 Strength tests to which accuracy requirements apply, as in 4.1.4, are those involving static, impact, or  
22 fatigue loading as specified in ISO 4210-2, 4.7 to 4.13, ISO 4210-2, 4.16, and ISO 4210-2, 4.20.2.

#### 23 4.1.3 Numbers and condition of specimens for the strength tests

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

27 When more than one test is conducted on the same sample, the test sequence shall be clearly recorded in  
28 the test report or record of testing. It should be noted that if more than one test is conducted on the same  
29 sample, earlier tests can influence the results of subsequent tests. Also, if a sample fails when it has been  
30 subjected to more than one test, a direct comparison with single testing is not possible.

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

#### 32 4.1.4 Accuracy tolerances of test conditions for brake tests and strength tests

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

Forces and torques	0/+5 %
Masses and weights	±1 %

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Dimensions	±1 mm
Angles	±1°
Time duration	±5 s
Temperatures	±2 °C
Pressures	±5 %

34 **4.2 Front mudguard test methods**35 **4.2.1 Front mudguard with stays test methods**36 **4.2.1.1 Stage 1: Test method — Tangential obstruction**

37 Insert a 12-mm-diameter steel rod between the spokes, in contact with the rim and below the front  
38 mudguard stays. Rotate the wheel to apply a tangentially upward force of 160 N against the front  
39 mudguard stays; maintain this force for 1 min, as shown in Figure 1

40 Remove the rod and determine whether or not the wheel is free to rotate in the direction of forward  
41 movement of the bicycle and whether or not any damage to the front mudguard adversely affects wheel  
42 rotation (blocking of the wheel) or steering.

43 If any mudguard stays break loose during the test, check the assembly according ISO 4210-2, 4.5 for  
44 dangerous protrusions which could cause injuries or potentially result in obstruction of the wheel.



45 **Figure 1 — Front mudguard — Tangential obstruction test**

47 **4.2.1.2 Stage 2: Test method — Mudguard stays impact test**

48 Mount a 12 mm diameter steel rod at one end of a lever arm which is able to rotate freely around the  
49 wheel axis, as shown in Figure 2, so that when placed between the spokes, the rod makes contact with  
50 the rim. Ensure that the steel rod is long enough to come in contact with both left and right mudguard  
51 stay(s).

52 Measure the distance  $L_1$  between the rod axis and wheel axis. At the other end of the lever arm arrange  
53 for a 10 kg weight  $M$  to be attached at distance  $L_2$  ( $L_2 = 1,5 \times L_1$ ) from the wheel axis.

54 Ensure that the assembly of steel rod and lever arm is balanced around the wheel axle, so that it is in  
55 equilibrium before the weight is applied.

56 Attach the 10 kg weight and set the release height  $h$  to 250 mm. The release height  $h$  is the vertical  
57 distance from the upper surface of the steel rod to the point where the steel rod hits the mudguard stays.