



NSAI
Standards

Irish Standard
I.S. EN ISO 4210-4:2014

Cycles - Safety requirements for bicycles - Part 4: Braking test methods (ISO 4210- 4:2014)

I.S. EN ISO 4210-4:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

EN ISO 4210-4:2014

Published:

2014-07-02

*This document was published
under the authority of the NSAI
and comes into effect on:*

2014-07-19

ICS number:

43.150

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann



Correction Notice

Reference: EN ISO 4210-4:2014

Title: Cycles - Safety requirements for bicycles - Part 4: Braking test methods (ISO 4210-4:2014, Corrected version 2014-11-01)

Work Item: 00333028

Brussels, 2014-11-12

Please include the following minor editorial correction(s) in the document related to:

the following language version(s) :

- ☒ English
- ☒ French
- ☐ German

for the following procedure :

- ☐ PQ/UQ
- ☐ Enquiry
- ☐ 2nd Enquiry
- ☐ Parallel Enquiry
- ☐ 2nd Parallel Enquiry
- ☐ Formal Vote
- ☐ 2nd Formal Vote
- ☐ Parallel Formal Vote
- ☐ 2nd Parallel Formal Vote
- ☐ UAP
- ☐ TC Approval
- ☐ 2nd TC Approval
- ☐ Publication
- ☒ Parallel Publication

It has been brought to our attention that this document, issued on 2014-07-02, requires modification.

ISO has published on 2014-11-01 a corrected version for ISO 4210-4:2014 (English & French).

Please find enclosed the updated English and French versions.

This page is intentionally left BLANK.

EUROPEAN STANDARD

EN ISO 4210-4

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2014

ICS 43.150

Supersedes EN 14764:2005, EN 14766:2005, EN
14781:2005

English Version

Cycles - Safety requirements for bicycles - Part 4: Braking test methods (ISO 4210-4:2014, Corrected version 2014-11-01)

Cycles - Exigences de sécurité des bicyclettes - Partie 4:
Méthodes d'essai de freinage (ISO 4210-4:2014, Version
corrigée 2014-11-01)

Fahrräder - Sicherheitstechnische Anforderungen an
Fahrräder - Teil 4: Prüfverfahren für Bremsen (ISO 4210-
4:2014, korrigierte Fassung 2014-11-01)

This European Standard was approved by CEN on 21 June 2014.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	3
----------------------	----------

Foreword

This document (EN ISO 4210-4:2014) 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 January 2015, and conflicting national standards shall be withdrawn at the latest by July 2015.

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

This document supersedes EN 14764:2005, EN 14766:2005, EN 14781:2005.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 4210-4:2014, Corrected version 2014-11-01 has been approved by CEN as EN ISO 4210-4:2014 without any modification.

This page is intentionally left blank

INTERNATIONAL STANDARD

**ISO
4210-4**

First edition
2014-07-01

Corrected version
2014-11-01

Cycles — Safety requirements for bicycles —

Part 4: Braking test methods

Cycles — Exigences de sécurité des bicyclettes —

Partie 4: Méthodes d'essai de freinage



Reference number
ISO 4210-4:2014(E)

© ISO 2014

ISO 4210-4:2014(E)



COPYRIGHT PROTECTED DOCUMENT

© ISO 2014

All rights reserved. Unless otherwise specified, 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
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Test methods	1
4.1 Brake lever grip dimensions.....	1
4.2 Brake levers — Position of applied force.....	5
4.3 Brake-block and brake-pad assemblies — Security test.....	7
4.4 Hand-operated braking-system — Strength test.....	7
4.5 Back-pedal braking system — Strength test.....	7
4.6 Braking performance.....	8
4.7 Brakes — Heat-resistance test.....	25
Annex A (informative) Explanation of the method of least squares for obtaining the line of best fit and ± 20 % limit lines for braking performance linearity	26
Bibliography	29

ISO 4210-4:2014(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).

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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 149, *Cycles*, Subcommittee SC 1, *Cycles and major sub-assemblies*.

This first edition of ISO 4210-4, together with ISO 4210-1, ISO 4210-2, ISO 4210-3, ISO 4210-5, ISO 4210-6, ISO 4210-7, ISO 4210-8, and ISO 4210-9, cancels and replaces ISO 4210:1996, which has been technically revised.

ISO 4210 consists of the following parts, under the general title *Cycles — Safety requirements for bicycles*:

- *Part 1: Terms and definitions*
- *Part 2: Requirements for city and trekking, young adult, mountain and racing bicycles*
- *Part 3: Common test methods*
- *Part 4: Braking test methods*
- *Part 5: Steering test methods*
- *Part 6: Frame and fork test methods*
- *Part 7: Wheels and rims test methods*
- *Part 8: Pedals and drive system test methods*
- *Part 9: Saddles and seat-post test methods*

This corrected version of ISO 4210-4:2014 incorporates a date's change in 4.6.1, 4.6.3.6, 4.6.3.9, 4.6.3.10, 4.6.3.11 and 4.6.5.7 e) and two technical corrections in [Annex A](#).

Introduction

This International Standard has been developed in response to the 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.

For the purpose of improvement of repeatability and reproducibility, and considering the applicability to all types of bicycle and the size and influence of the operator, the machine test method reflects today's state of the art and is preferred to the track test method.

Unless there is evidence of improvement of the test track method in the future, make this method informative for the next revision. Users of this International Standard are invited to provide their feedback to the ISO/TC 149/SC 1.

Cycles — Safety requirements for bicycles —

Part 4: Braking test methods

1 Scope

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

2 Normative references

The following referenced documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 4210-2:2014, *Cycles — Safety requirements for bicycles — Part 2: Requirements for city & trekking, young adult, mountain and racing bicycles*

3 Terms and definitions

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

4 Test methods

4.1 Brake lever grip dimensions

4.1.1 Test method for the brake lever similar to type A or type B

Fit the gauge illustrated in [Figure 1](#) over the handlebar grip or the handlebar (when the manufacturer does not fit a grip) and the brake lever as shown in [Figure 2](#) so that face A is in contact with the handlebar or grip and the side of the brake lever. Ensure that face B spans an area of that part of the brake lever which is intended for contact with the rider's fingers without the gauge causing any movement of the brake lever towards the handlebar or 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. The measurement should be conducted only on a fully assembled bicycle.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-