

First edition
2014-07-01

Corrected version
2015-02-01

**Cycles — Safety requirements for
bicycles —**

**Part 5:
Steering test methods**

Cycles — Exigences de sécurité des bicyclettes —

Partie 5: Méthodes d'essai de guidage



Reference number
ISO 4210-5:2014(E)

© ISO 2014

This document is a preview generated by EBS



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 Handlebar grips and plugs..... | 1 |
| 4.1.1 Freezing test..... | 1 |
| 4.1.2 Hot water test..... | 2 |
| 4.2 Handlebar stem — Lateral bending test..... | 2 |
| 4.3 Handlebar and stem assembly — Lateral bending test..... | 3 |
| 4.4 Handlebar stem — Forward bending test..... | 5 |
| 4.4.1 Test method for stage 1..... | 5 |
| 4.4.2 Test method for stage 2..... | 7 |
| 4.5 Handlebar to handlebar stem — Torsional security test..... | 7 |
| 4.6 Handlebar stem to fork steerer — Torsional security test..... | 7 |
| 4.7 Bar end to handlebar — Torsional security test..... | 8 |
| 4.8 Aerodynamic extensions to handlebar — Torsional security test..... | 9 |
| 4.9 Handlebar and stem assembly — Fatigue test..... | 10 |
| 4.9.1 Test method for city and trekking, young adult, and mountain bicycles..... | 10 |
| 4.9.2 Test method for racing bicycles..... | 12 |

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 4210-5, together with ISO 4210-1, ISO 4210-2, ISO 4210-3, ISO 4210-4, 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 4210-5:2014 incorporates a change in Figure 6 and a correction of the format of all tables.

Introduction

This International Standard has been developed in response to demand throughout the world, and the aim has been to ensure that bicycles manufactured in compliance with this International Standard 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 to be used on public roads, national regulations apply.

Cycles — Safety requirements for bicycles —

Part 5: Steering test methods

1 Scope

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

2 Normative references

The following 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 and trekking, young adult, mountain and racing bicycles*

ISO 4210-3:2014, *Cycles – Safety requirements for bicycles – Part 3: Common test methods*

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 Handlebar grips and plugs

4.1.1 Freezing test

Immerse the handlebar, with handlebar grips or plugs fitted, in water at room temperature for 1 h and then place the handlebar in a freezer until the handlebar is at a temperature lower than $-5\text{ }^{\circ}\text{C}$. Remove the handlebar from the freezer and allow the temperature of the handlebar to reach $-5\text{ }^{\circ}\text{C}$, and then apply a force of 70 N to the grip or plug in the loosening direction as shown in [Figure 1](#). Maintain the force until the temperature of the handlebar has reached $+5\text{ }^{\circ}\text{C}$. It shall be permitted to create a hole in the plug to allow for the testing fixture to be fitted so long as the hole does not affect the seat of the plug in the handlebar and the fixture does not contact the handlebar during the test.