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Cycles — Safety requirements for bicycles —

Part 8: Pedals and crank test methods

Cycles — Exigences de sécurité des bicyclettes —

Partie 8: Méthodes d'essai des pédales et du pédalier

ICS 43.150

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 4210-8 was prepared by Technical Committee ISO/TC 149, *Cycles*, Subcommittee SC 1, *Cycles and major sub-assemblies*.

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 & 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: Wheel and rim test methods*
- *Part 8: Pedal and drive system test methods*
- *Part 9: Saddle and seat-post test methods*

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 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 standardisation of components.

If the bicycle is to be used on public roads, national regulations apply and it may be equipped with a lighting system.

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Cycles — Safety requirements for bicycles —

Part 8: Pedals and crank test methods

1 Scope

This part of ISO 4210 specifies pedal and drive system test methods for ISO 4210-2.

2 Normative references

The following referenced documents are indispensable for the application 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 4210-1:–¹), *Cycles – Safety requirements for bicycles – Part 1: Terms and definitions*

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

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

IEC 60529:2001, *Degrees of protection provided by enclosures (IP Code)*

3 Terms and definitions

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

4 Test methods

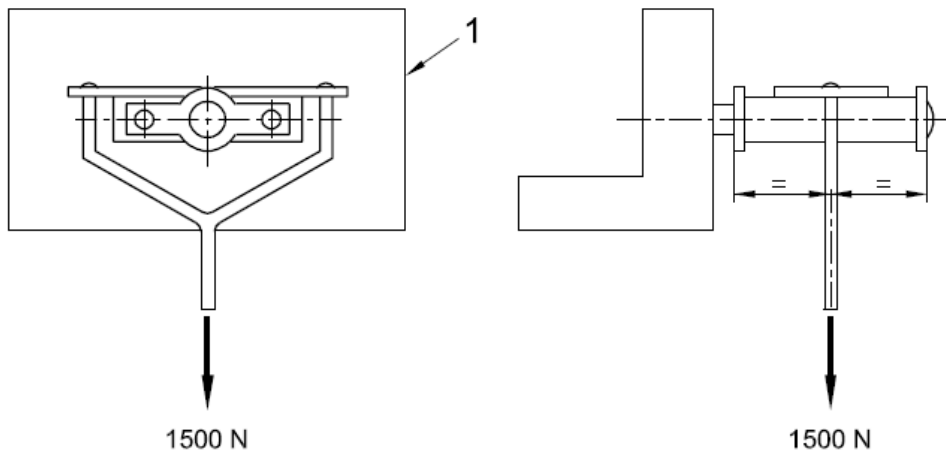
4.1 Pedal – Static strength test

Screw the pedal-spindle securely into a suitable rigid fixture with its axis horizontal, as shown in Figure 1, and apply a vertically-downward force of 1 500 N for 1 min to the centre of the pedal as shown in Figure 1. Release the force and examine the pedal assembly and the spindle.

1) To be published. (Revision of ISO 4210:1996)

2) To be published. (Revision of ISO 4210:1996)

3) To be published. (Revision of ISO 4210:1996)



Key

- 1 Rigid mount

Figure 1 — Pedal/pedal-spindle assembly: static strength test

4.2 Pedal – Impact test

Screw the pedal-spindle securely into a suitable rigid fixture with its axis horizontal as shown in Figure 3 and release a striker of the design shown in Figure 2 and mass 15 kg from a height of 400 mm to strike the pedal at the centre of the pedal.

Dimensions in millimetres

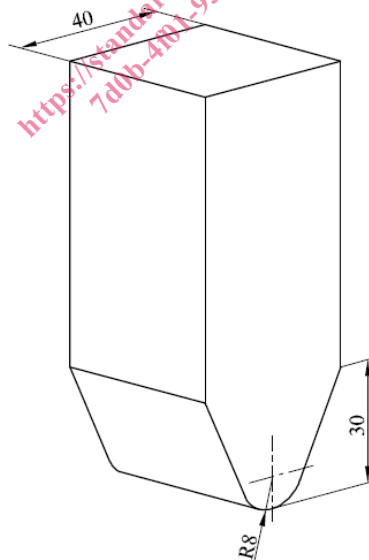


Figure 2 — striker dimensions

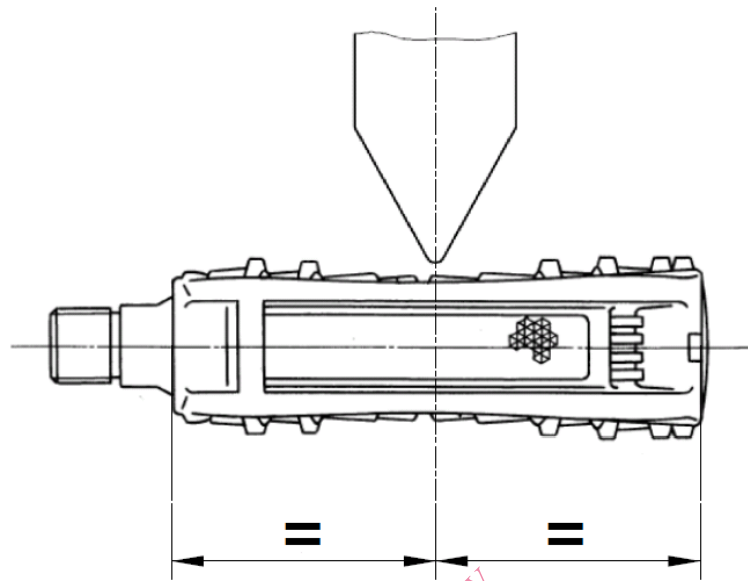


Figure 3 — position of impact

4.3 Pedal – Dynamic durability test

Screw each pedal securely into a threaded hole in a rotatable test-shaft as shown in Figure 4 and suspend a mass of M at the centre of the pedal width by means of a tension-spring to each pedal, the object of the springs being to minimise oscillations of the load. The masses are given in Table 1.

Drive the shaft at a speed not exceeding 100 min^{-1} for a total of 100 000 revolutions. If the pedals are provided with two tread surfaces, they shall be turned through 180° after 50 000 revolutions.

Table 1 — Masses on pedal

Bicycle type	City and trekking bicycles	Young adult bicycles	Mountain bicycles	Racing bicycles
Mass, M <i>kg</i>	80	80	90	90