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Assistive products for walking, manipulated by one arm — Requirements and test methods —

Part 4: Walking sticks with three or more legs

Produits d'assistance à la marche manipulés avec un bras — Exigences et méthodes d'essai —

Partie 4: Cannes à trois pieds ou plus

ISO/FDIS 11334-4

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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.

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 document 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).

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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 173, *Assistive products*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 293, *Assistive products and accessibility*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 11334-4:1999), which has been technically revised.

The main changes are as follows:

- ~~the~~ the minimum requirements for stability have been removed and are replaced by requirements on disclosure of the stability performance level for the specified direction;
- ~~the~~ the static strength test for the legs and separation part was added;
- [Clause 6](#) ~~Clause 6~~ on general requirements for assistive products for walking was added.

A list of all parts in the ISO 11334 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.

Introduction

A walking stick with three or more legs can be used when a person needs assistance for walking. It provides more stability when walking and standing compared with other types of sticks and canes manipulated by one arm and can thus reduce the risk of falling.

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Assistive products for walking, manipulated by ~~one~~ arm — Requirements and test methods — ~~—~~ —

Part 4: Walking sticks with three or more legs

1 Scope

This document specifies requirements and test methods of walking sticks with three or more legs used as assistive products for walking, manipulated by one arm, without accessories, unless specified in the particular test procedure. This document also gives requirements related to safety, ergonomics, performance and information supplied by the manufacturer, including marking and labelling.

The requirements and tests are based on every-day use of walking sticks with three or more legs as assistive products for walking for a maximum user mass as specified by the manufacturer. This document is for walking sticks with three or more legs specified for a user mass of no less than 35 kg.

This document is not applicable to walking sticks with three or more legs with underarm or forearm support or with moving parts such as a universal joint.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 7000-1](https://standards.iteh.ai/ISO/7000-1), *Graphical symbols for use on equipment — Registered symbols*

ISO 10993-1, *Biological evaluation of medical devices — Part 1: Evaluation and testing within a risk management process*

ISO 10993-5, *Biological evaluation of medical devices — Part 5: Tests for in vitro cytotoxicity*

ISO 14971, *Medical devices — Application of risk management to medical devices*

[ISO 15223-1](https://standards.iteh.ai/ISO/15223-1), *Medical devices — Symbols to be used with information to be supplied by the manufacturer — Part 1: General requirements*

ISO 20417, *Medical devices — Information to be supplied by the manufacturer*

ISO 24415-1, *Tips for assistive products for walking — Requirements and test methods — Part 1: Friction of tips*

[ISO 7000-1](https://standards.iteh.ai/ISO/7000-1), *Graphical symbols for use on equipment — Registered symbols*

[ISO 15223-1](https://standards.iteh.ai/ISO/15223-1), *Medical devices — Symbols to be used with information to be supplied by the manufacturer — Part 1: General requirements*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

anatomic handgrip

handgrip (3.2) that is shaped in a way to match the ~~shaped~~shape of the hand

Note 1 to entry: Anatomic handgrips exist in right-hand and left-hand types.

3.2

handgrip

part of the walking stick which is normally held in the hand when the walking stick is in use

3.3

handgrip length

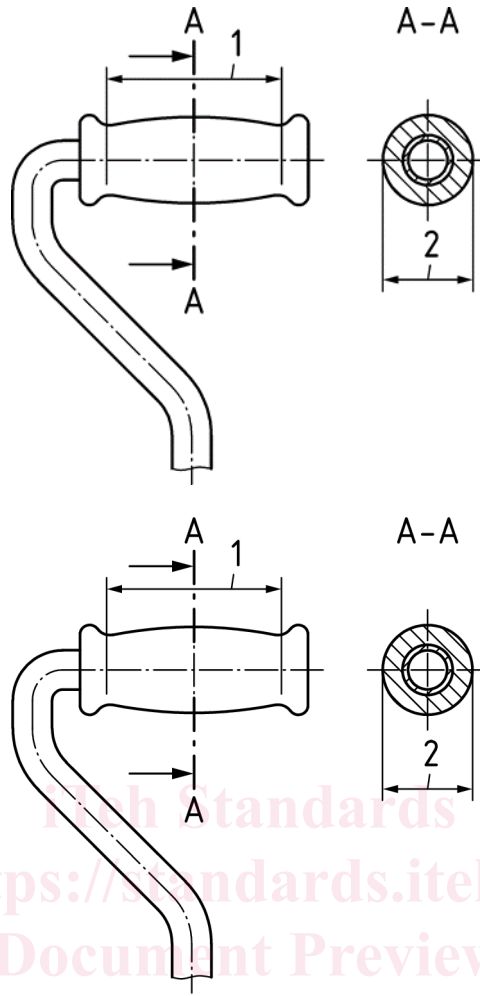
dimension of the *handgrip* (3.2) measured longitudinally where the hand rests

Note 1 to entry: See [Figure 1](#) ~~Figure~~, key 1.

Note 2 to entry: Where the front end or the rear end of the handgrip is not clear, the full length of the handgrip that can support the weight of the user is defined as the handgrip length.

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Key

- 1 handgrip length
- 2 handgrip width

Figure 1 — Detail of handle and handgrip

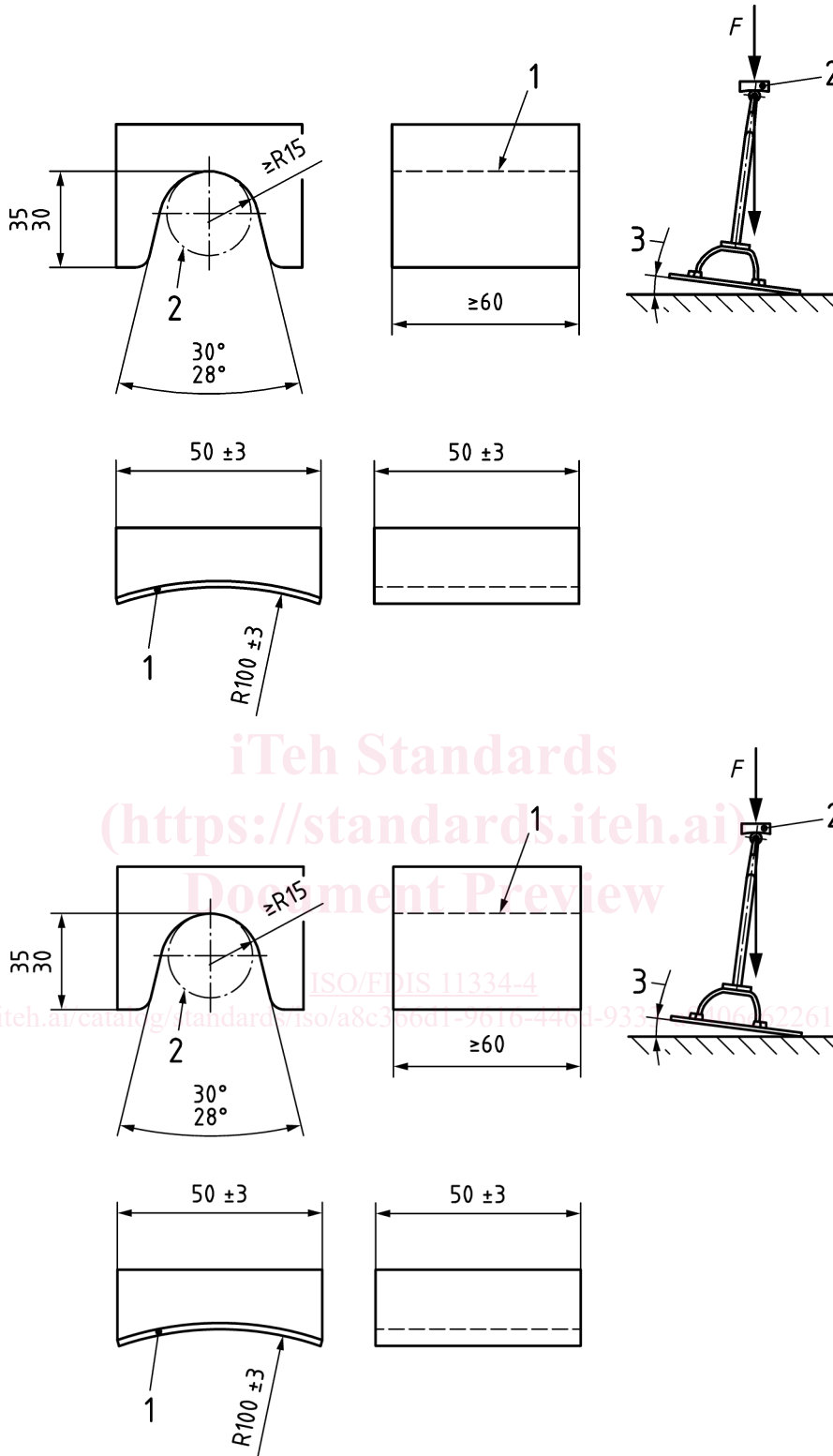
3.4

handgrip loading pad

device capable of applying the test force to the *handgrip* (3.2)

Note 1 to entry: See [Figure 2](#) ~~Figure~~, [key 2](#).

Note 2 to entry: For some anatomically shaped handgrips, it ~~may can~~ be necessary to design a custom loading pad.



Key

- | | | | |
|-----|-----------------|---|----------------------|
| F | force | 2 | handgrip loading pad |
| 1 | loading surface | 3 | tilt angle |

Figure 2 — Handgrip loading pad

**3.5
handgrip reference point**

crossing point of vertical line through centre of *shaft* (3.11) and *handgrip* (3.2)

**3.6
handgrip width**

dimension of the *handgrip* (3.2) measured length cross-sectionally to longitudinal direction where the hand rests

Note 1 to entry: See [Figure 1](#) ~~Figure 1~~, key ~~1~~2.

**3.7
handle**

part of walking stick to which the *handgrip* (3.2) is attached

Note 1 to entry: On most devices, the handgrip and the handle are part of the same piece.

**3.8
leg**

frame or rod separated from the *shaft* (3.11), which ~~contact~~contacts the ground

**3.9
locking device**

part of a walking stick that provides locking of the height and/or other adjustment mechanisms

Note 1 to entry: See [Figure 4](#) ~~Figure 4~~, key 7.

**3.10
separation part**

part of a *shaft* (3.11) to which separated *legs* (3.8) are ~~attach~~attached

Note 1 to entry: See [Figure 9](#) ~~Figure 8~~, key 1.

**3.11
shaft**

prop section of the walking stick

Note 1 to entry: In most types of walking sticks, the shaft is made of two telescopic tubes used for height adjustment.

**3.12
tip**

part of a walking stick *leg(s)* (3.8) which contacts the ground

Note 1 to entry: see [Figure 4](#) ~~Figure 4~~, key 10.

**3.13
maximum user mass**

greatest permissible mass of the person using the product

Note 1 to entry: It is measured in kilograms (kg).

[SOURCE: ISO 21856:2022, 3.16.1]