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Touring ski-boots for adults — Interface with touring ski-bindings — Requirements and test methods

*Chaussures de ski de randonnée pour adultes — Zone de contact avec
les fixations de skis de randonnée — Exigences et méthodes d'essai*

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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 83, *Sports and other recreational facilities and equipment*, Subcommittee SC 4, *Snowsports Equipment*.

This fifth edition cancels and replaces the fourth edition (ISO 9523:2019), which has been technically revised.

The main changes are as follows:

- the procedure of testing the coefficient of dynamic friction was modified ([4.3.6.1.3](#));
- the requirements on front interface and rear interface were modified;
- the requirements on contact zone for adjustment device of touring sole were modified.

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.

Touring ski-boots for adults — Interface with touring ski-bindings — Requirements and test methods

1 Scope

This document specifies the dimensions and characteristics of the interface, requirements, test methods and marking of ski-boots with a rigid ski boot sole that are used with current systems of touring ski-bindings with attachment at the boot toe and boot heel, the proper release function of which depends on the dimensions and design of the interfaces.

This document is not necessarily applicable to touring ski boots that function independent of the sole shape with certain ski-binding systems.

This document is applicable to ski-boots of sizes 15,0 to 32,0 in the Mondopoint system (see [Annex A](#)).

It is applicable to rigid touring boots. Boots with softer shells such as Telemark boots are excluded as they do not have the necessary shell stability to act as part of the release systems.

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 527-1, *Plastics — Determination of tensile properties — Part 1: General principles*

ISO 527-2, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

ISO 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness)*

ISO 1183 (all parts), *Plastics — Methods for determining the density of non-cellular plastics*

ISO 2039-1, *Plastics — Determination of hardness — Part 1: Ball indentation method*

ISO 5355, *Alpine ski-boots — Requirements and test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5355 and the following 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

interface area

part of the ski-boot intended to contact with the ski-binding

3.2

front interface

part of the ski-boot intended to contact with the front binding

3.3

rear interface

part of the ski-boot intended to contact with the rear binding

3.4

free space

space intended to avoid contact between ski-boots and binding, especially during step in/step out or release

3.5

rigid ski boot sole

ski boot sole that does not flex when walking

Note 1 to entry: See [4.3.5.1](#).

3.6

median plane

middle plane of the sole, longitudinal and perpendicular to the bearing surface

3.7

bearing surface

toe or heel surface of the boot sole that is in contact with a plane on which the boot is standing

3.8

ski-brake

device to stop the ski after release of the binding

4 Requirements and test methods

4.1 General

If no specific test methods are indicated, check the characteristics as appropriate (e.g. by measurement).

If not otherwise indicated, execute the testing under standard atmosphere 23/50, in accordance with ISO 554, with ordinary tolerances.

4.2 Dimensions

The dimensions of the boot toe and heel shall correspond to [Figure 1](#).

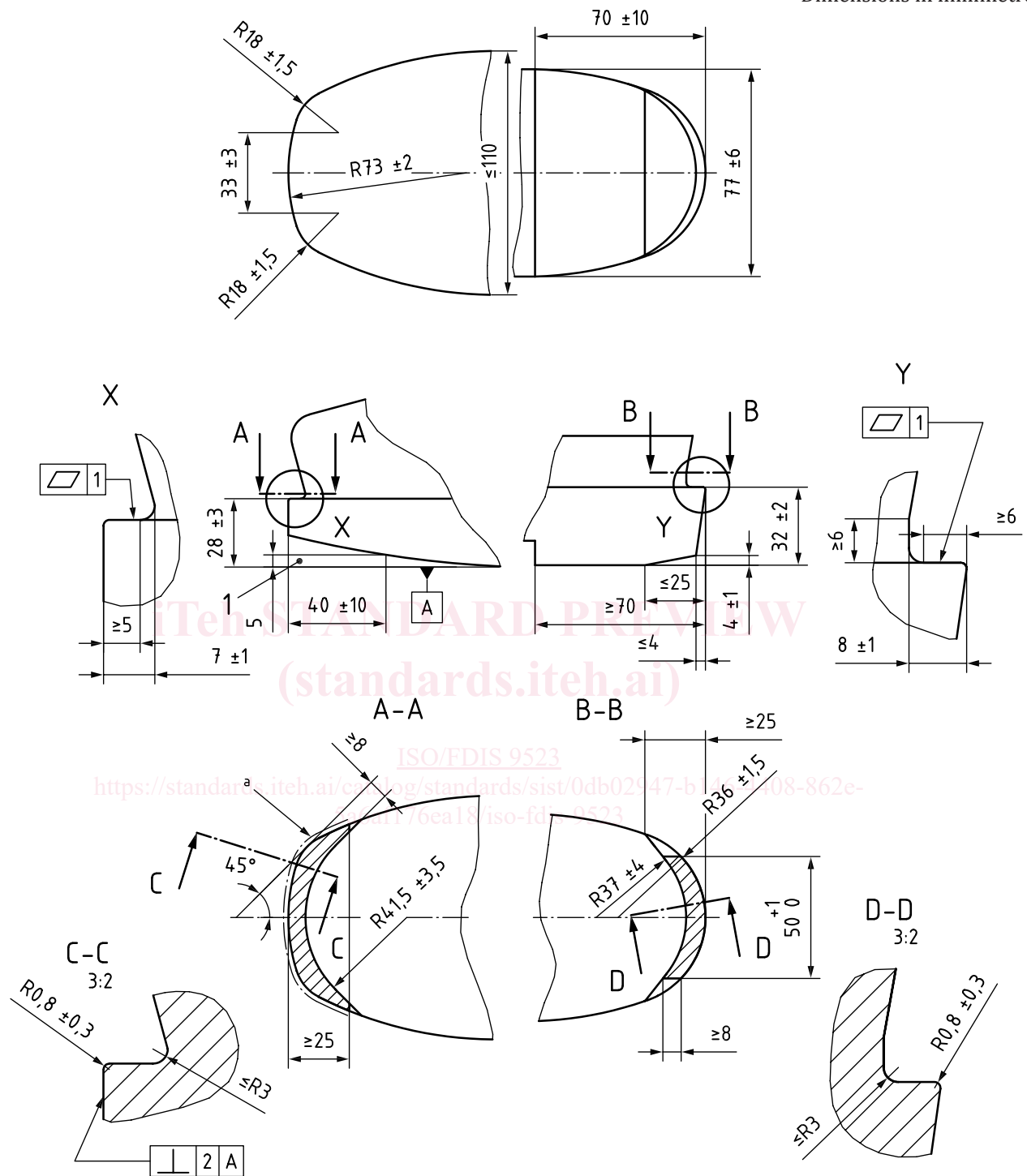
Fundamentally, all dimensions shall be within the indicated tolerance. However, relevance to safety varies in importance depending on the indicated dimensions.

Looking at several dimensions (see [Annex B](#)), deviations may be accepted, provided that the following specifications are respected:

- a) deviations remain exceptional;
- b) deviations are small;
- c) no limitations of function arise with all marketable and critical bindings;
- d) tolerance is respected at the next possible chance (e.g. reconstruction of a tool).

The gauge (see [Figure 1](#)) shall be wider than the boot sole.

Dimensions in millimetres



Key

- 1 gauge
- a Area where perpendicularity tolerance is valid.

NOTE Shaded areas are those in which the tolerance of evenness and the dimensions $28\text{ mm} \pm 3\text{ mm}$ and $32\text{ mm} \pm 2\text{ mm}$ are valid.

Figure 1 — Dimensions of boot toe and heel

4.3 Design

4.3.1 Sole length

The sole lengths of the two ski-boots in a pair shall not differ by more than 2 mm.

4.3.2 Boot sole interface

The sole dimensions in the toe and heel boot binding interface areas shall be symmetrical about the median plane within an admissible deviation of 1 mm.

If the side walls of the sole are built in two parts, it shall be ensured that no part of the lower area of the sole protrudes beyond the upper profile.

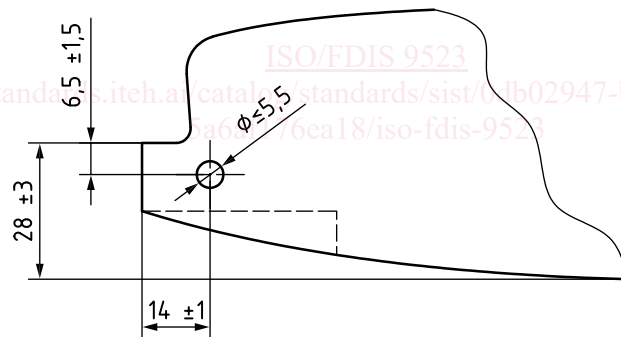
The design of the toe and heel boot binding interface areas shall not negatively influence the function of the binding.

4.3.3 Side walls at boot toe

The side walls of the sole at the boot toe up to a distance of at least 25 mm from the toe end shall be perpendicular to the bearing surface within an admissible inward-outward deviation as shown in [Figure 1](#), section C-C.

Cut outs with an outside diameter of not more than 5,5 mm with a centre in $14 \text{ mm} \pm 1 \text{ mm}$ from the tip and $6,5 \text{ mm} \pm 1,5 \text{ mm}$ from the top surface are allowed (see [Figure 2](#)).

Around the hole, material different from the shell material may be used.



Dimensions in millimetres

Figure 2 — Boot with the position and dimensions of an example for cut outs allowed in the toe area

4.3.4 Side walls at boot heel

The lateral side walls of the sole at the boot heel up to a distance of at least 70 mm from the heel end shall be perpendicular to the bearing surface or tapered inwards-outwards between 0° and 10° up to a height of 14 mm.

If lateral grooves of more than 2 mm depth are present at the heel (see [Figure 3](#)), supports conforming with [Figure 4](#) shall remain.

Other configurations of grooves may be used if they are within the given dimensions in [Figure 3](#), [Figure 4](#) and [Figure 5](#).

Dimensions in millimetres

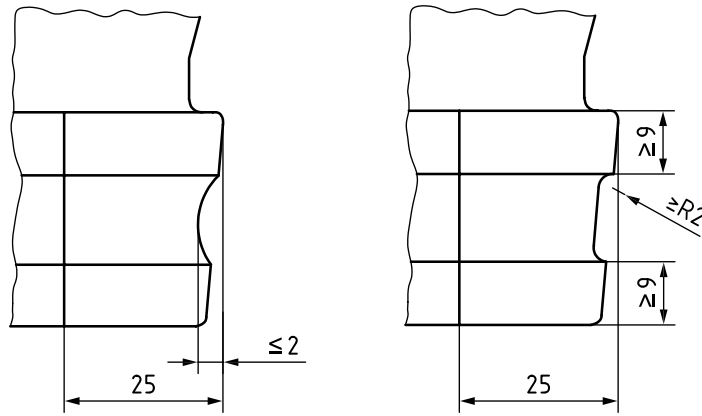


Figure 3 — Lateral grooves at heel

Dimensions in millimetres

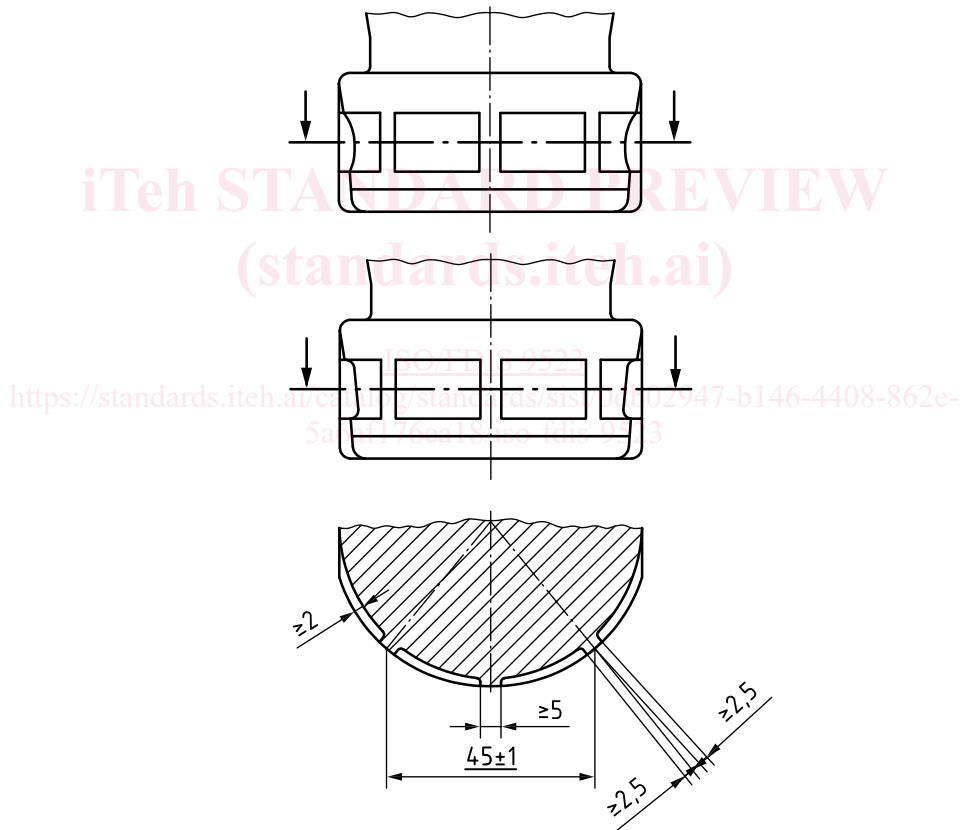
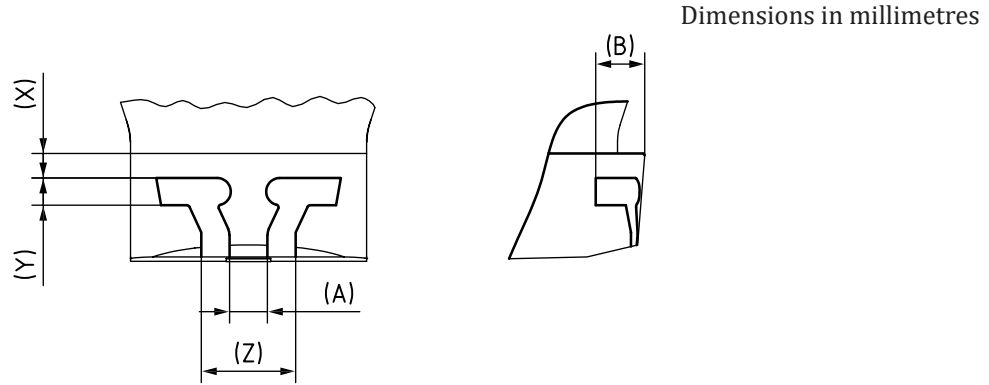


Figure 4 — Lateral supports at heel



Key

- (A) 12,8 mm 0 / -1
- (B) 13 mm 0/+2
- (X) ≥ 6,5 mm (reinforced by metal)
- (Y) (7,5 ± 0,5) mm
- (Z) (25,5 +6/-0) mm

Figure 5 — Boot with the position and dimensions of an example for cut outs allowed in the heel area

The design of the cut out at the heel area of the boot shall not negatively influence the function of the binding.

4.3.5 Rigidity

4.3.5.1 Requirements

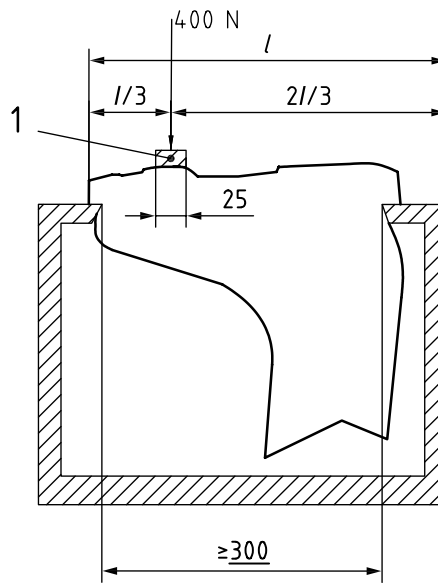
When measured in accordance with 4.3.5.2, the sole shall not deflect more than 5 mm.

NOTE This is to avoid any contact point outside the frontal zone and the boot sole interface area (see Figure 7) in order to ensure proper lateral release function.

4.3.5.2 Test method

The rigid metal test bar (width 25 mm) shall cover the whole width of the sole (see Figure 6).

Dimensions in millimetres



Key

- l length of sole
- 1 rigid metal test bar

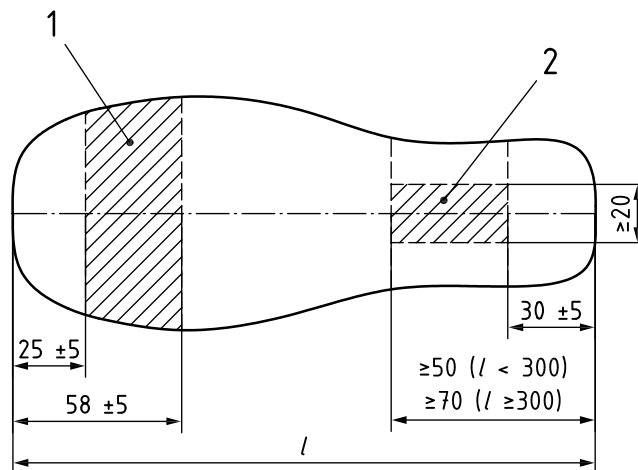
Figure 6 — Testing of rigidity
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4.3.6 Boot sole interface areas with the binding

The boot sole interface areas shall conform to [Figure 7](#).

There shall be no gaps >10 mm between two studs in any direction in the toe interface area and heel interface area (see [Figure 7](#)).

Dimensions in millimetres



Key

- 1 front interface
- 2 rear interface
- l length of sole

Figure 7 — Interface areas