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## **Alpine ski boots with improved walking soles — Interface with alpine ski-bindings – Requirements and test methods**

*Chaussures de ski pour skis alpins dotées de semelles de marche  
améliorées — Zone de contact avec les fixations de ski alpin —  
Exigences et méthodes d'essai*



Reference number  
ISO 23223:2021(E)

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<b>Contents</b>		Page
<b>Introduction</b> .....		<b>iv</b>
<b>Foreword</b> .....		<b>v</b>
<b>1 Scope</b> .....		<b>1</b>
<b>2 Normative references</b> .....		<b>1</b>
<b>3 Terms and definitions</b> .....		<b>1</b>
<b>4 Requirements and test methods</b> .....		<b>2</b>
4.1 General.....		2
4.2 Dimensions and evenness.....		2
4.2.1 Dimensions.....		2
4.2.2 Evenness.....		7
4.3 Design.....		9
4.3.1 Sole length.....		9
4.3.2 Symmetry.....		9
4.3.3 Side walls.....		9
4.3.4 Free spaces.....		13
4.3.5 Bearing surfaces.....		20
4.3.6 Interfaces.....		26
4.3.7 Style of boot shell.....		30
4.3.8 Mounting point.....		31
4.3.9 Sole length.....		31
<b>5 Marking</b> .....		<b>31</b>
<b>6 Information supplied by the manufacturer</b> .....		<b>31</b>
6.1 General.....		31
6.2 User manual.....		32
<b>Annex A (informative) Mondopoint system ski-boot sizing and marking</b> .....		<b>33</b>
<b>Annex B (informative) Dimensions and requirements of “2<sup>nd</sup> degree”</b> .....		<b>34</b>
<b>Annex C (informative) Test body for dimensional test of free space to binding</b> .....		<b>36</b>
<b>Annex D (normative) Test gauge for dimensional check</b> .....		<b>39</b>
<b>Bibliography</b> .....		<b>41</b>

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### Introduction

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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](http://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](http://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*.

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](http://www.iso.org/members.html).



# Alpine ski boots with improved walking soles — Interface with alpine ski-bindings – Requirements and test methods

## 1 Scope

This document specifies requirements, test methods and marking for alpine ski-boots with improved walking soles that are used with systems of alpine ski-bindings for improved walking soles with attachment at the boot front and boot rear, the proper release function of which depends on the dimensions and design of the interfaces.

Alpine ski boots with improved walking soles are intended to a better walkability without affecting the function of the alpine ski binding designed for improved walking soles.

This document is applicable to ski-boots of sizes 15,0 and larger (Types A (Adults) and C (Children)) in the Mondo point system (see [Annex A](#)).

## 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 and relative density of non-cellular plastics*

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

ISO 11088, *Alpine ski/binding/boot (S-B-B) system — Assembly, adjustment and inspection*

ISO 13993, *Rental ski shop practice — Sampling and inspection of complete and incomplete alpine ski-binding-boot systems in rental applications*

## 3 Terms and definitions

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

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

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1

#### **interface**

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

## ISO 23223:2021(E)

### 3.2

#### **front interface**

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

### 3.3

#### **rear interface**

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

### 3.4

#### **free space**

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

### 3.5

#### **bearing surfaces**

front and rear surfaces of the boot sole that are in contact with the ski binding

### 3.6

#### **median plane**

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

### 3.7

#### **ski-brake**

device to stop the ski after release of the binding

### 3.8

#### **walking sole**

sole with hard and soft materials and an optimized profile, intended to a better walkability without affecting the function of the alpine ski binding

### 3.9

#### **low-friction zone**

area of the bearing surfaces that have a low-friction coefficient

## 4 Requirements and test methods

### 4.1 General

If no specific test method is 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.

A test body for dimensional test of free space to binding is defined in [Annex C](#).

### 4.2 Dimensions and evenness

#### 4.2.1 Dimensions

The boot toe and heel shall conform with [Figure 1](#), [Figure 2](#), [Figure 3](#), [Figure 4](#) and [Figure 5](#).

All dimensions shall be within the indicated tolerances. However, relevance to safety varies in importance depending on the indicated dimensions.

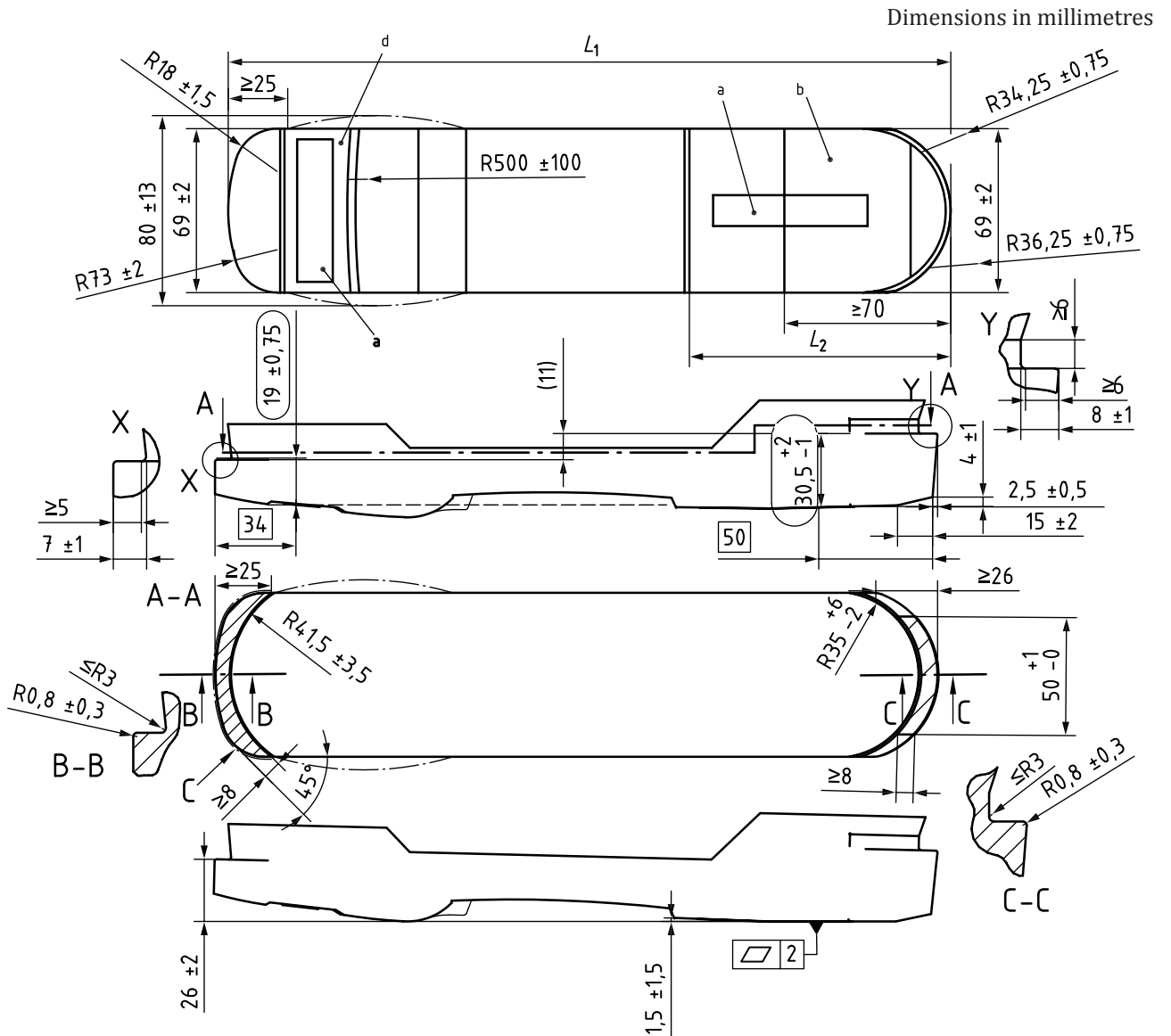
Measurements in gauge shall be done with a preload of 100 N and 50 N for Type A and Type C respectively, by inserting into the ski-boot itself a steel cylinder.



Looking at several dimensions (for dimensions of the 2<sup>nd</sup> degree, see [Annex B](#)) a deviation from the tolerances may be accepted, provided that the following requirements are respected:

- a) The deviations shall remain exceptional.
- b) The deviations shall be small.
- c) No limitations of function shall arise with all marketable and critical bindings.
- d) The tolerances shall be respected at the next possible chance (e.g. reconstruction of a tool).

Dimensions for boots with inserts working with pin bindings are given in this document.



$L_1$  sole length

$L_2$  heel length

a Low-friction zone in accordance with [4.3.5.1](#).

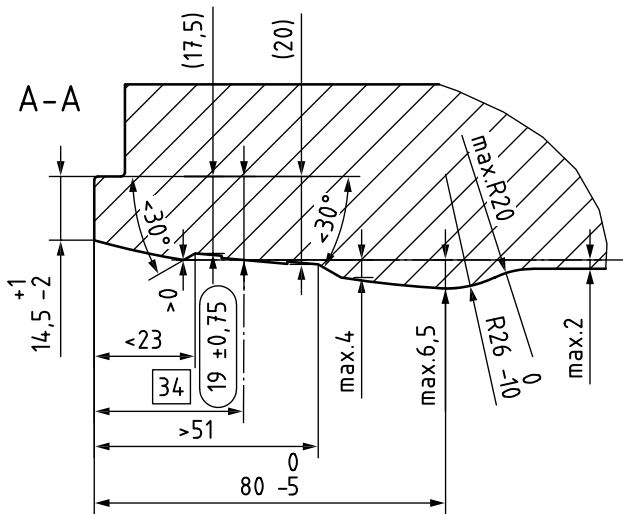
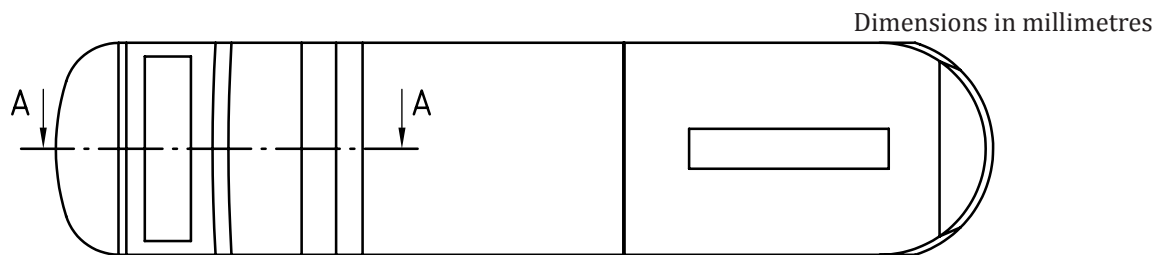
**ISO 23223:2021(E)**

- b Bearing surface.
- c Area in which the tolerance of perpendicularity is valid (see [4.3.3.1](#)).
- d Section of recessed soft component not in contact with the binding.

$L_1$	<300	$\geq 300$
$L_2$	$\geq 100$	$\geq 110$

NOTE Shaded areas including areas with index c are those in which the tolerances of evenness and the dimensions  $19 \pm 0,75$  and  $30,5 +2/-1$  are valid.

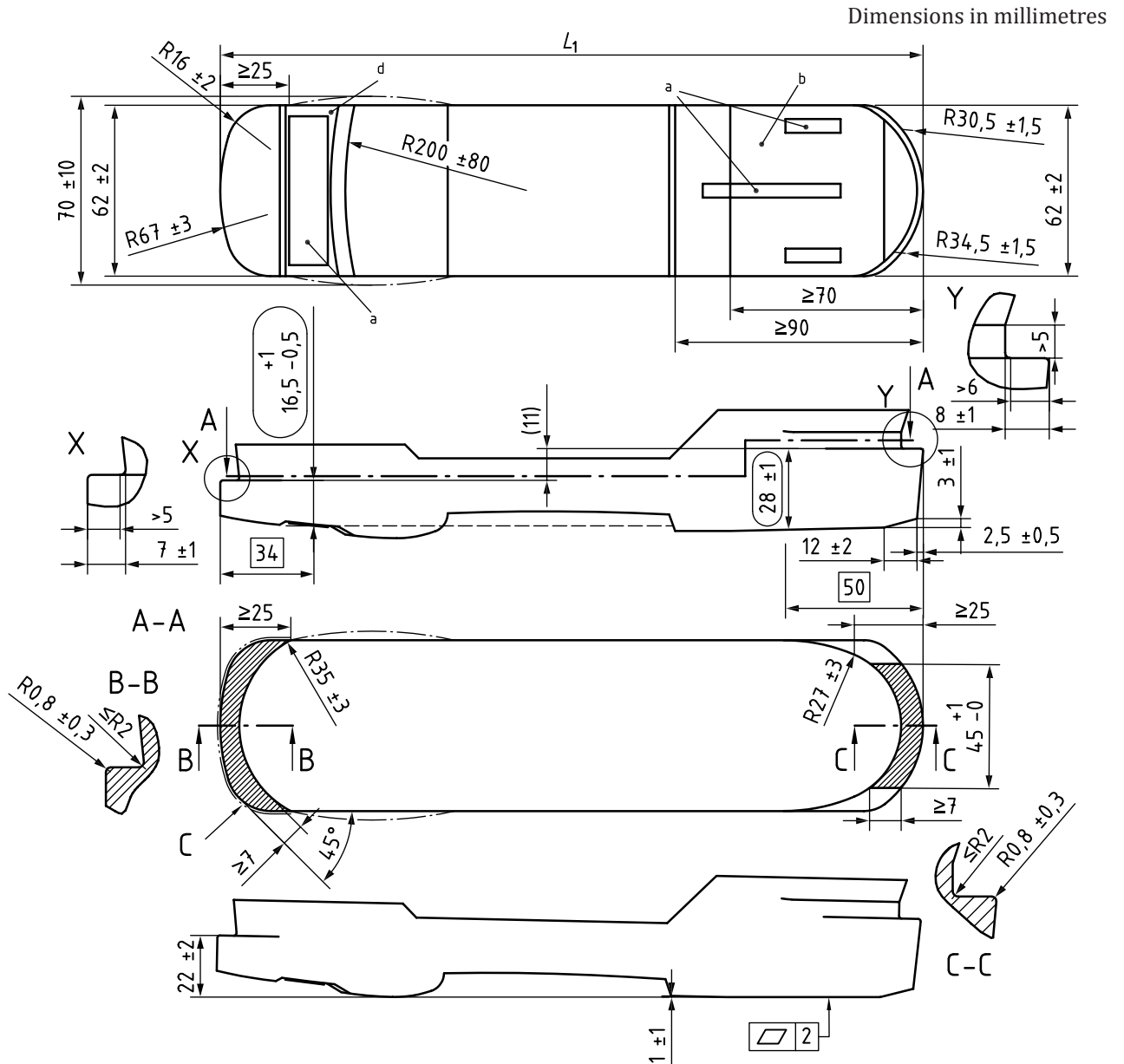
**Figure 1 — Dimensions of boot toe and heel, Type A**



NOTE Some of these measurements are of 2<sup>nd</sup> degree, see [Annex B](#).

**Figure 2 — Detailed dimensions of boot, Type A**

[Figure 2](#) provides all the key dimensions (nominal) to build new boots. The gauge (see [Annex C](#)) can be used to check whether a boot is in conformity with this document.



**Key**

- a Low-friction zone in accordance with 4.3.5.1.
- b Bearing surface.
- c Area in which the tolerance of perpendicularity is valid (see 4.3.3.1).
- d Section of recessed soft component not in contact to binding.
- $L_1$  sole length

NOTE Shaded areas, including areas designated by footnote c, are those in which the tolerances of evenness and the dimensions  $16,5^{+1}_{-0,5}$  and  $28 \pm 1$  are valid.

**Figure 3 — Dimensions of boot toe and heel, Type C**