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Alpine ski-boots — Requirements and test methods

Chaussures de ski pour skis alpins — 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.

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 5355 was prepared by Technical Committee ISO/TC 83, *Sports and recreational equipment*, Subcommittee SC 3, *Ski bindings*.

This fourth edition cancels and replaces the third edition (ISO 5355:1997), which has been restructured and technically revised.

Alpine ski-boots — Requirements and test methods

1 Scope

This International Standard specifies the requirements, test methods and marking of ski-boots which are used with current systems of alpine 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.

For ski-binding systems that function irrespective of the sole shape or that have different requirements for the sole dimensions, it is not always necessary for the ski-boot soles to comply with this International Standard in order to achieve the desired degree of safety.

It applies to ski-boots of sizes 15,0 and larger (types A and C) in the Mondopoint system (see Annex A).

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

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 1183:1987, *Plastics — Methods for determining the density and relative density of non-cellular plastics*

ISO 2039-1:2001, *Plastics — Determination of hardness — Part 1: Ball indentation method*

ISO 9407, *Shoe sizes — Mondopoint system of sizing and marking*

3 Terms and definitions

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

3.1

interface

that part of the ski-boot intended for contact with the ski-binding

3.2

front interface

that part of the ski-boot intended to fit with the front binding

3.3

rear interface

that part of the ski-boot intended to fit with the rear binding

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3.4

free space

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

3.5

median plane

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

3.6

bearing surfaces

front and rear surfaces of the boot sole which are in contact with a plane on which the boot is standing

3.7

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 (see ISO 554) with ordinary tolerances.

4.2 Dimensions

4.2.1 Requirements

The boot toe and heel shall comply with Figures 1 and 2. Other boot dimensions need not correspond to the figures.

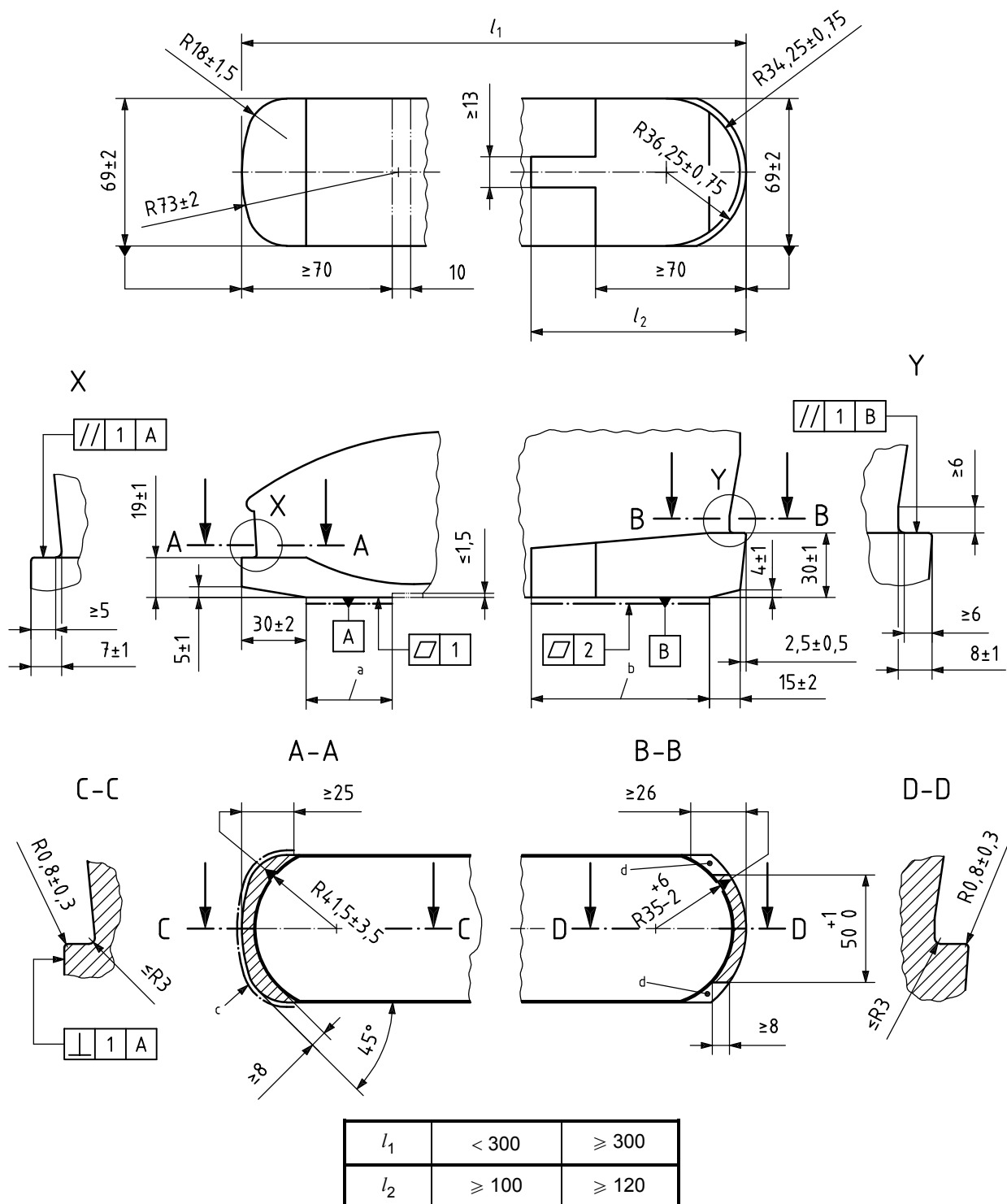
Fundamentally, all dimensions shall be within the indicated tolerances. However, relevance to safety varies in importance depending on the indicated dimensions.

Looking at several dimensions ("dimensions of the 2nd degree") a deviation from the tolerances can be accepted, provided that the following requirements are respected.

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

See Annex B.

Dimensions in millimetres

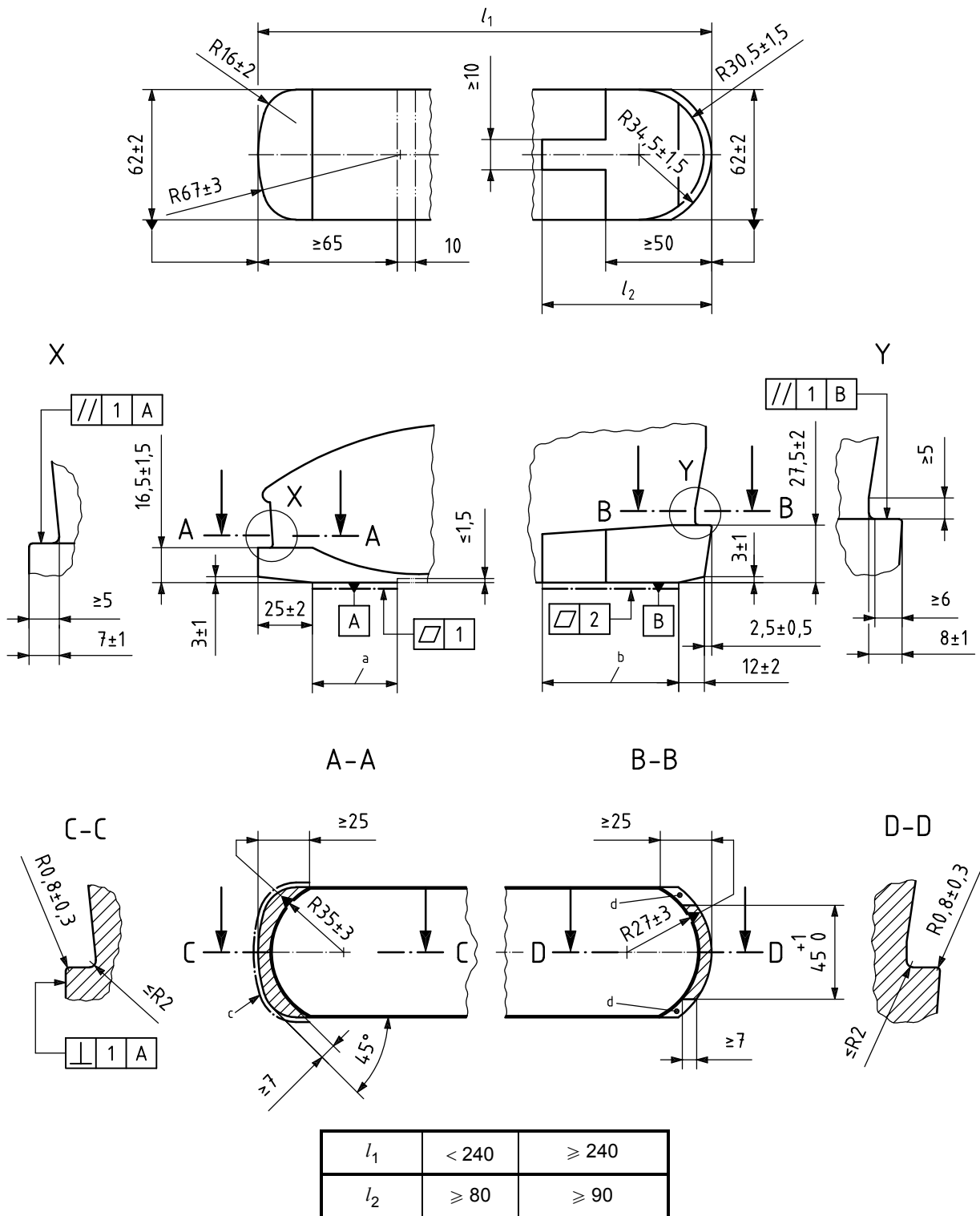


NOTE Shaded areas including areas with index ^d are those in which the tolerances of evenness and the dimensions (19 ± 1) mm and (30 ± 1) mm are valid.

- a Low-friction zone/bearing surface.
- b Bearing surface (see 3.6).
- c Area in which the tolerance of perpendicularity is valid (see 4.3.3).
- d Reserved areas for adjustment device.

Figure 1 — Dimensions of boot toe and heel, type A

Dimensions in millimetres



NOTE Shaded areas including areas with index ^d are those in which the tolerances of evenness and the dimensions (16,5 ± 1,5) mm and (27,5 ± 2) mm are valid.

- a Low-friction zone/bearing surface.
- b Bearing surface (see 3.6).
- c Area in which the tolerance of perpendicularity is valid (see 4.3.3).
- d Reserved areas for adjustment device.

Figure 2 — Dimensions of boot toe and heel, type C

4.2.2 Testing of evenness

4.2.2.1 When the front bearing surface rests on a plane, a gauge 1 mm thick and 10 mm wide shall not enter the AB area at any point. See Figure 3.

4.2.2.2 When the rear bearing surface rests on a plane, a gauge 1 mm thick and 10 mm wide shall not enter the CD area at any point. See Figure 4.

4.2.2.3 Before measuring the evenness of the bearing surfaces as described in Figure 5, apply a load of 100 N for type A

50 N for type C

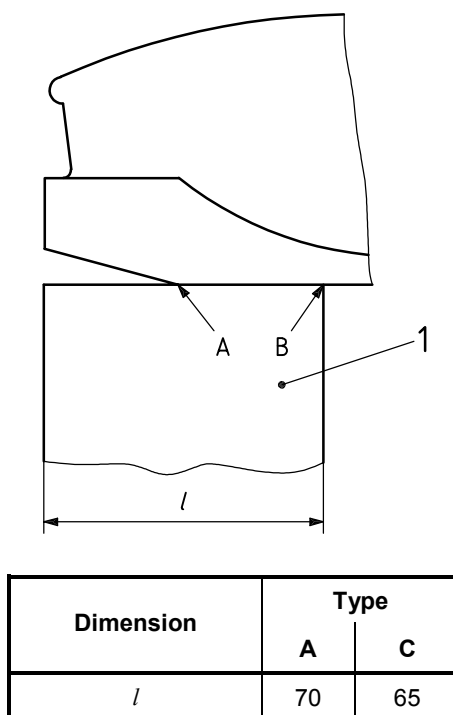
by inserting into the ski-boot itself a steel cylinder with a diameter of 80 mm (type A)

50 mm (type C)

the ends rounded with a 10 mm radius and having a corresponding mass. After 5 min, determine the flatness measurement as follows.

When the boot rests on the test plane (see Figure 5), check the maximum thickness of a 10 mm wide gauge which can enter the BC area anywhere (to a maximum of 2 mm). This gauge shall not enter the AB and CD areas.

Dimensions in millimetres

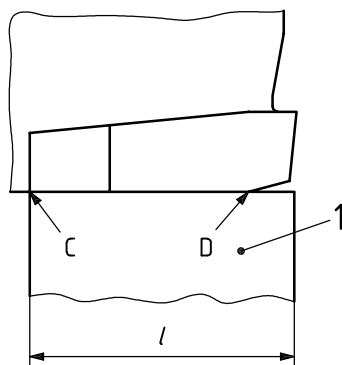


Key

1 test plane

Figure 3 — Testing of evenness at the front

Dimensions in millimetres

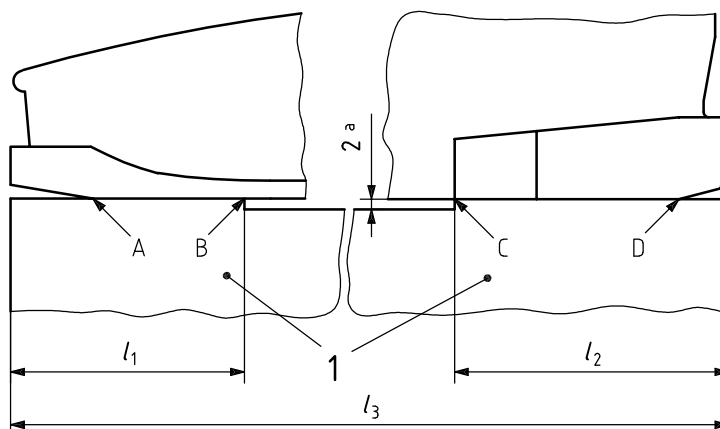


Dimension	Type	
	A	C
l	100	80

Key
1 test plane

Figure 4 — Testing of evenness at the rear

Dimensions in millimetres



Dimension	Type	
	A	C
l_1	70	65
l_2	100	80
l_3	Sole length	

Key
1 test plane
^a Cut-out in the test surface.

Figure 5 — Testing of evenness of the whole boot

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 Symmetry

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

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 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.

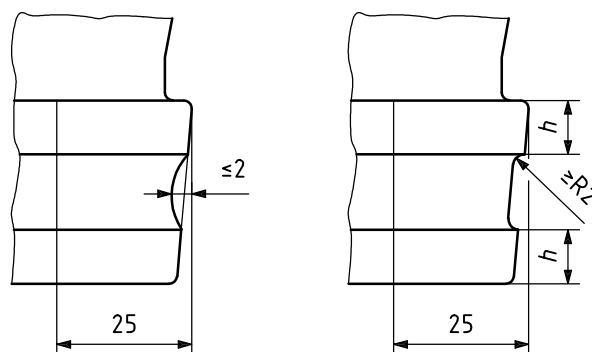
4.3.4 Side walls at boot heel

The lateral side walls of the sole at the boot heel, up to a distance from the heel end of at least 70 mm for type A and at least 50 mm for type C, shall be perpendicular to the bearing surface, or tapered inwards-outwards between 0° and 10° up to a height of 14 mm.

No part of the sole shall project beyond the 10° side wall limitation, up to a height of 14 mm between 70 mm and 85 mm for type A and between 50 mm and 65 mm for type C.

If lateral grooves of more than 2 mm depth are present at the heel, see Figure 6, supports at least complying with Figure 7 shall remain.

Dimensions in millimetres



Dimension	Type	
	A min.	C min.
<i>h</i>	9	7

Figure 6 — Lateral grooves at heel