

# INTERNATIONAL STANDARD

**ISO**  
**8364**

Third edition  
1999-10-01

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## **Alpine skis and bindings — Binding mounting area — Requirements and test methods**

*Skis et fixations de skis alpins — Zone de montage de la fixation —  
Exigences de tenue et méthodes d'essai*

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Reference number  
ISO 8364:1999(E)

## 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 3.

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.

International Standard ISO 8364 was prepared by Technical Committee ISO/TC 83, *Sports and recreational equipment*, Subcommittee SC 4, *Skis and snowboards*.

This third edition cancels and replaces the second edition (ISO 8364:1991), of which it constitutes a technical revision.

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Printed in Switzerland

# Alpine skis and bindings — Binding mounting area — Requirements and test methods

## 1 Scope

This International Standard specifies requirements and test methods for the binding mounting area and free space area, ski bindings and retention devices of alpine skis in order to optimize the compatibility of the functional unit "ski binding - retention device - boot".

It contains data for the manufacturer of alpine skis, bindings and retention devices concerning dimensions, tests and other specifications for the binding mounting area.

This International Standard is applicable to alpine skis of the following nominal lengths:

— group 1:  $l_N \geq 1\,700$  mm

The requirements for group 1 are also applicable to adult skis of length between 1 400 mm and 1 700 mm.

— group 2:  $1\,400 \text{ mm} \leq l_N < 1\,700$  mm

— group 3:  $1\,000 \text{ mm} \leq l_N < 1\,400$  mm

— group 4:  $750 \text{ mm} \leq l_N < 1\,000$  mm

For dimensions with no tolerance indicated, a tolerance of  $\pm 1$  mm is valid.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2632-1:1985, *Roughness comparison specimens — Part 1: Turned, ground, bored, milled, shaped and planed.*

ISO 5355:1997, *Alpine ski-boots — Safety requirements and test methods.*

ISO 6004:1991, *Alpine skis — Ski binding screws — Requirements.*

ISO 6289:1985, *Skis — Terms and definitions.*

ISO 6506:1981, *Metallic materials — Hardness test — Brinell test.*

ISO 10045:1991, *Alpine skis — Binding mounting area — Requirements for test screws.*

### 3 Terms and definitions

For the purposes of this International Standard, the terms and definitions given in ISO 6289, and the following, apply.

#### 3.1 mounting point

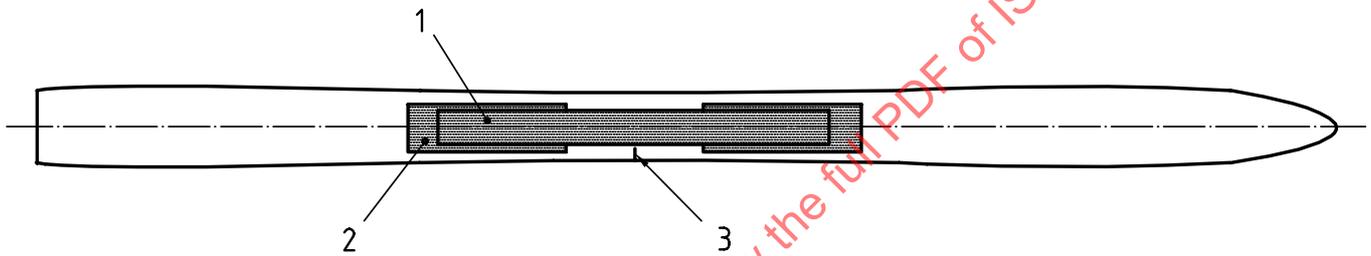
location on the ski that indicates the position of the boot along the length of the ski for the purpose of mounting the binding; the mounting point corresponds to the boot sole mark established by ISO 5355 for alpine ski-boots

#### 3.2 free space area

area forward and rearward from the mounting point, fulfilling minimum flatness requirements in accordance with clause 5 (see Figure 1)

#### 3.3 binding mounting area

area forward and rearward from the mounting point, fulfilling minimum strength requirements in accordance with clause 7 (see Figure 1)



**Key**

- 1 Binding mounting area (width according to 6.2)
- 2 Free space area
- 3 Mounting point

**Figure 1 — Free space and binding mounting areas**

### 4 Specifications of free space area

#### 4.1 Length of free space area

The length of the free space area forward and backward from the mounting point shall be according to Table 1.

**Table 1 — Length of free space area**

| Group | Length of free space area forward and backward from the mounting point<br>mm |
|-------|--|
| 1     | 300  |
| 2     | 270  |
| 3     | 210  |
| 4     | 190  |

## 4.2 Width of the free space area

The minimum width of the free space area shall be as follows:

— For groups 1 and 2:

48 mm within an area 100 mm forward and 100 mm rearward from the mounting point

53 mm in the remaining part of the free space area

— For groups 3 and 4:

46 mm within an area 100 mm forward and 100 mm rearward from the mounting point

50 mm in the remaining part of the free space area

## 5 Geometrical requirements of free space area

### 5.1 Longitudinal profile of the ski surface within the free space area

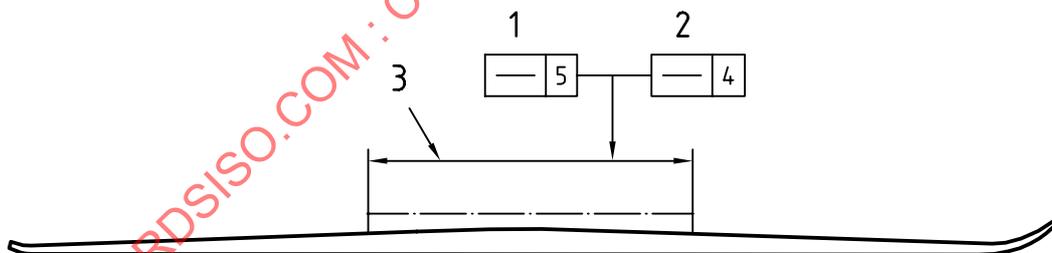
Deviations from the straightness of the longitudinal profile from a flat profile are only permissible in the form of a constant curve in the length of the free space area; the tolerance on straightness in this area, the ski base being pressed against a flat surface, is given for

— groups 1 and 2: 5 mm

— groups 3 and 4: 4 mm

in Figure 2.

Tolerance in millimetres



#### Key

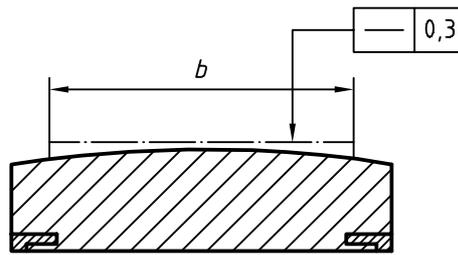
- 1 Groups 1 and 2
- 2 Groups 3 and 4
- 3 Length of the free space area

Figure 2 — Longitudinal profile of the surface

Outside the binding mounting area, within the length of the free space area, a maximum downward deviation of 2 mm from the constant curve is permissible.

### 5.2 Transverse profile of the ski surface within the free space area

Deviations of straightness of the transverse profile from the flat profile are only permissible in the form of a constant curve across the width of the free space area the tolerance on straightness within this area is given in Figure 3.



*b* Width of the free space area

**Figure 3 — Transverse profile of the structure**

Beyond the free space area, on the remaining width of the ski, there shall be no elevation beyond the surface envelope of the free space area.

## 6 Specifications of binding mounting area

### 6.1 Length of binding mounting area

The length of the binding mounting area forward and backward from the mounting point shall be according to Table 2.

**Table 2 — Length of binding mounting area**

| Group | Length of binding mounting area forward and backward from the mounting point<br>mm |
|-------|--|
| 1     | 285  |
| 2     | 240  |
| 3     | 210  |
| 4     | 190  |

### 6.2 Width of binding mounting area

The width of the binding mounting area shall be such that it allows the mounting of alpine ski binding screws of nominal diameter 5,5 mm in accordance with ISO 6004, with the retention strength requirements in accordance with 7.1 fulfilled.

### 6.3 Minimum thickness of binding mounting area

Within the binding mounting area, a drill hole depth, *d'*, shall be available (see Figure 4) as follows:

- groups 1 and 2: 9,5 mm
- groups 3 and 4: 7,5 mm

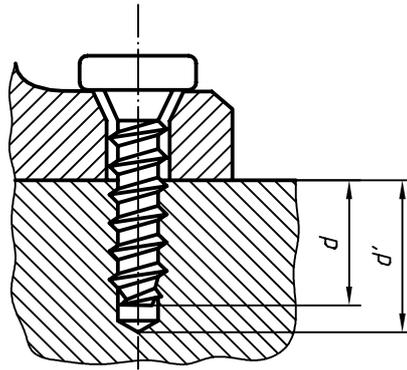


Figure 4 — Penetration depth,  $d$ , of mounting screws

## 7 Strength requirements of binding mounting area

### 7.1 Screw retention strength

Within the binding mounting area, the minimum value of the screw retention strength for two screws, if the load is applied quasi-statically, shall be as follows:

— group 1: 2 600 N

The requirements for group 1 are also applicable to adult skis of length between 1 400 mm and 1 700 mm.

— group 2: 1 800 N

— group 3: 1 300 N

— group 4: 1 300 N

### 7.2 Stripping resistance

The minimum value of the stripping resistance of the ski shall be 5 N·m for groups 1 and 2.

NOTE The present state of the art does not allow a stripping resistance of 5 N·m for skis of groups 3 and 4. It is the responsibility of the ski manufacturer to indicate ski models demanding caution (stripping resistance lower than 5 N·m) when mounting bindings and to give mounting instructions such as smaller diameter drilling and manual screwdriving.

## 8 Specifications of the binding

The hole-pattern shall be in accordance with the geometrical requirements of 8.1.

### 8.1 Centre-to-centre distances for binding mounting screws

#### 8.1.1 Maximum centre-to-centre distance

The maximum centre-to-centre distance in transverse orientation of the binding mounting screws shall be as follows:

— groups 1 and 2: 42,5 mm

— groups 3 and 4: 40,5 mm

### 8.1.2 Minimum centre-to-centre distance

For screws which are used for mounting of parts of the binding and retention devices, the centre-to-centre distance shall not be less than the following:

- groups 1 and 2: 25 mm in the longitudinal direction and  
20 mm in all other directions
- groups 3 and 4: 20 mm in the longitudinal direction and  
15 mm in all other directions

### 8.2 Penetration depth of binding screws

In order to ensure the required penetration depth, the manufacturer of the binding shall select a suitable length of binding screw, so that after mounting of the binding the shaft of the screw penetrates the ski, for

- groups 1 and 2:  $d = (8 \pm 0,5)$  mm
- groups 3 and 4:  $d = (6 \pm 0,5)$  mm

To avoid damaging the top layers (damage to the adhesive bond) the diameter of mounting plate holes or countersink facing the ski shall not exceed 8 mm and drill countersink shall be designed in such a way that its penetration into the top surface of the ski does not exceed 0,6 mm.

Alpine ski binding screws in accordance with ISO 6004 shall be used as mounting elements.

## 9 Side walls

Side walls shall be designed so that mounting of the binding with commonly used mounting devices is ensured. The basic requirement is that the clamping elements of the mounting device reach at least to the running surface of the ski.

## 10 Marking

### 10.1 Marking of the mounting point

A clearly visible mark shall be located on the left side or the top surface of the ski, up to the outer edge for the mounting of the binding. Unless otherwise specified by the ski manufacturer, this mark defines the mounting point in accordance with 3.1.

### 10.2 Marking of short adult skis

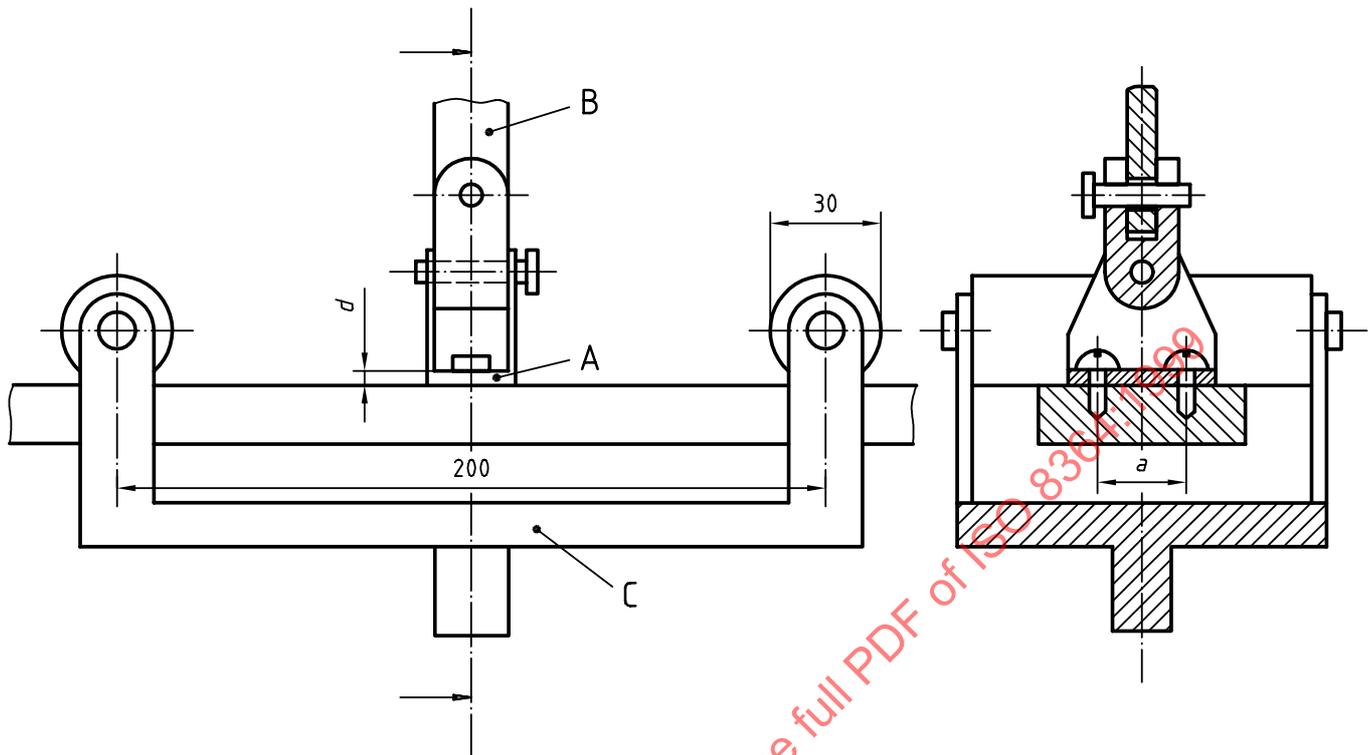
Short adult skis with a length between 1 400 mm and 1 700 mm shall be marked with the word "Adult", clearly visible, adjacent to the mounting point.

## 11 Apparatus

### 11.1 Retention strength

Tensile testing machine (with a pull-out device according to Figure 5), having a minimum load range of 10 000 N.

Dimensions in millimetres



*d* Thickness according to the penetration depth needed

Groups 1 and 2:  $a = 25$   
Groups 3 and 4:  $a = 20$

**Figure 5 — Tensile testing machine with pull-out device**

The pull-out device (see Figure 5) shall consist of the following components:

- a steel attachment plate (A) with two holes of diameter 6 mm — steel hardness shall be 135 HB30 according to ISO 6506;
- a universal joint (B) which is connected to the attachment plate and to the clamping device of the test machine;
- a ski support (C) with two support rollers.

When using standard test screws according to clause 12, the following penetration depths,  $d$ , shall be reached:

- groups 1 and 2:  $d = (8 \pm 0,5)$  mm
- groups 3 and 4:  $d = (6 \pm 0,5)$  mm.

## 11.2 Stripping resistance

Jig, used with a drill bushing, for drilling holes, mounting test screws and determination of stripping torque (see Figure 6 and 13.3.1).

The jig is equipped with a friction plate made of steel with hardness of approximately 135 HB30 according to ISO 6506, and surface roughness  $R_a$  of 0,8  $\mu\text{m}$  according to ISO 2632-1.

When using standard test screws according to clause 12, the following penetration depths,  $d$ , shall be reached:

- groups 1 and 2:  $d = (8 \pm 0,5)$  mm
- groups 3 and 4:  $d = (6 \pm 0,5)$  mm

## 12 Test screws

The screws used for the retention and stripping tests shall be in accordance with ISO 10045.

## 13 Test methods

### 13.1 Sampling and conditioning

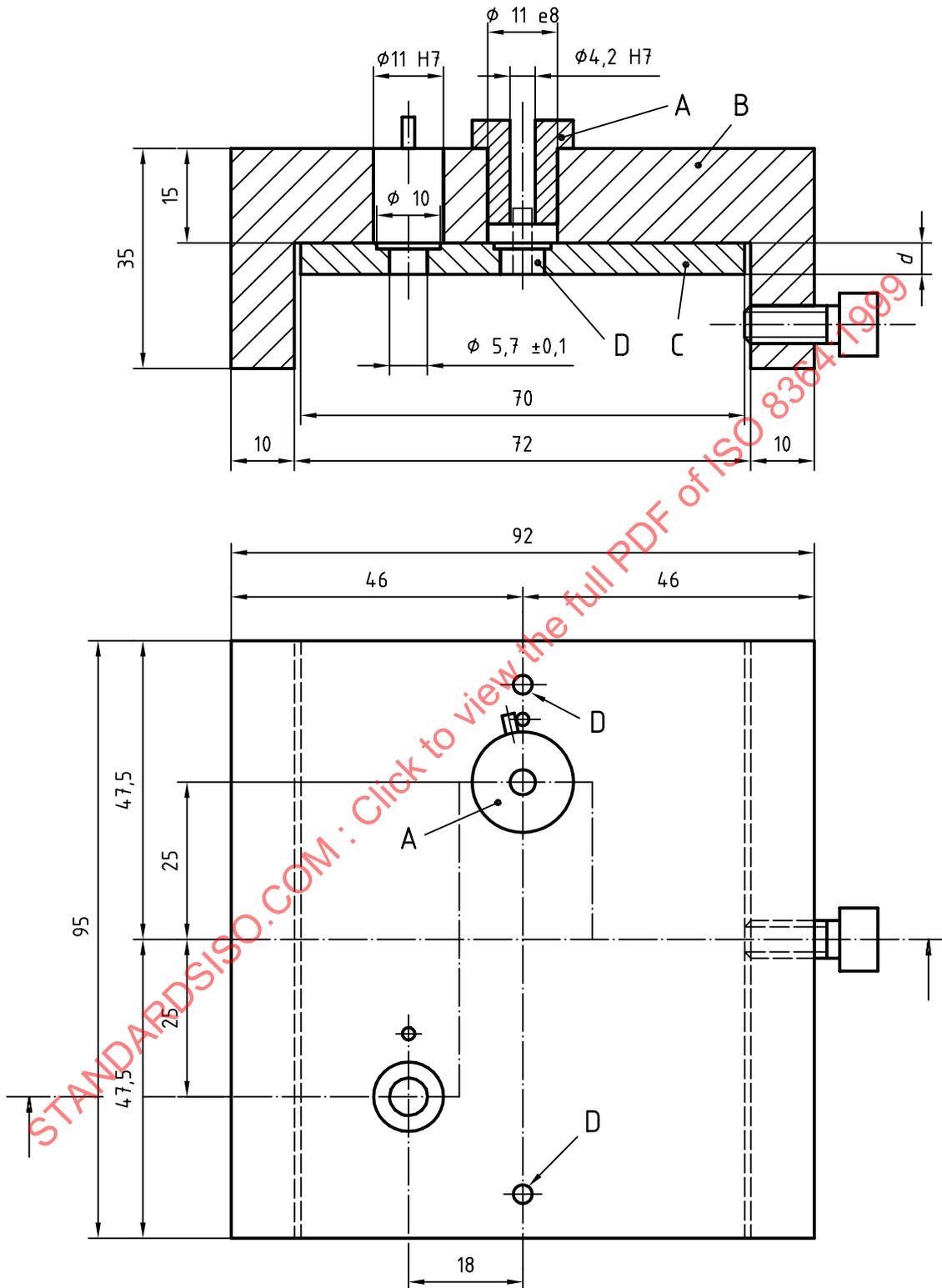
Carry out the test on three skis which have been at a room temperature of  $(23 \pm 5)$  °C for a minimum of 24 h, without specific preconditioning of the ski to be tested.

### 13.2 General requirements

Test the requirements of clauses 4 to 6 and 8 to 10 by measurement and/or sight check.

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Dimensions in millimetres



**Key**

- A Drill jig bushing
- B Drill jig
- C Friction plate
- D Centring pin

*d* Thickness according to the penetration depth needed

**Figure 6 — Drill and test jig**