

# INTERNATIONAL STANDARD

# ISO 6004

Second edition  
1991-08-15

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## Alpine skis — Ski binding screws — Requirements

*Skis alpins — Vis de fixation de skis — Spécifications*



Reference number  
ISO 6004:1991(E)

**ISO 6004:1991(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.

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 6004 was prepared by Technical Committee ISO/TC 83, *Sports and recreational equipment*, Sub-Committee SC 4, *Skis*.

This second edition cancels and replaces the first edition (ISO 6004:1981), of which it constitutes a technical revision.

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## Introduction

The use of ski binding screws complying with the requirements of this International Standard will improve binding mounting. By standardizing the drill hole diameter, recommendations by the manufacturers will no longer be required and mistakes and improper mounting, caused by differences in instructions, will be avoided. Also, standardization of the penetration depth will enable ski manufacturers to design their products such that there will be sufficient thickness in the mounting area, and it will facilitate the proper location of reinforcement parts to make optimum use of the fastening characteristics.

The proposed values for driving torque and stripping torque will enable adjustable torque-limiting screwdrivers to be used with the same adjustment for all skis.

The use of the cross recess No. 3 screw also contributes significantly to a considerable simplification of the binding mounting procedure.

## Alpine skis — Ski binding screws — Requirements

### 1 Scope

This International Standard specifies the dimensions, mechanical properties and fastening characteristics of screws used for mounting ski bindings on alpine skis.

The purpose of this International Standard is to facilitate the design of a more rational and safer binding mounting system.

### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1478:1983, *Tapping screws thread.*

ISO 2702:1974, *Heat-treated steel tapping screws — Mechanical properties.*

ISO 4042:1989, *Threaded components — Electroplated coatings.*

ISO 4757:1983, *Cross recesses for screws.*

ISO 6005:1981, *Alpine skis — Ski binding screws — Test methods.*

### 3 Definitions

For the purposes of this International Standard, the following definitions apply.

**3.1 ski binding screw:** A fastener which, after mounting, ensures the connection of binding and ski by axial pre-tension.

**3.2 penetration depth:** The distance from the top surface of the ski to the lower extremity of the ski binding screw.

**3.3 driving torque:** The maximum value of the moment required to drive the ski binding screw into the drill hole of the ski or test specimen.

**3.4 tightening torque:** The moment, specified in the mounting instructions or in the test procedure, which is used to tighten the ski binding screw to ensure sufficient fastening.

**3.5 stripping torque:** The maximum measurable moment which causes damage to the internal thread in the ski or the test specimen, or to the thread of the screw if the already tightened screw is further loaded by a driving moment.

**3.6 static pull-out resistance:** The resistance of the ski or test specimen to a pull-out force applied quasistatically in the axial direction.

### 4 Désignation

Alpine ski binding screws in accordance with this International Standard shall be designated by:

- a) the words "alpine ski binding screws" and the abbreviation "SBS";
- b) their nominal dimensions, i.e. diameter × length;
- c) the reference of this International Standard, i.e. ISO 6004;
- d) the type of screw head.

#### EXAMPLE

Alpine ski binding screws of nominal diameter 5,5 mm and length 12 mm, with countersunk heads would be designated:

Alpine ski binding screws SBS 5,5 × 12 ISO 6004 with countersunk heads

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## 5 Requirements

The strength requirements and typical application characteristics shall be tested according to ISO 6005.

### 5.1 Materials

Any material complying with the requirements of 5.3 and 5.4 may be used (e.g. case hardened or heat treated steel according to ISO 2702).

### 5.2 Dimensions

#### 5.2.1 Screw head

Alpine ski binding screws shall be cross recess type Z No. 3 type with a recommended minimum penetration depth of 2,72 mm to 3,18 mm (see ISO 4757).

If screws having countersunk heads are used, the angle of countersinking  $90^\circ \begin{smallmatrix} +2^\circ \\ -0^\circ \end{smallmatrix}$  is recommended.

#### 5.2.2 Thread and tip configuration

Within the maximum major diameter of 5,5 mm according to figure 1, the cross-section of the screw may be circular or non-circular. The tolerance on the outer diameter shall be h13.

The tolerance on the total length of the screw shall be  $\pm 0,5$  mm.

The thread should be extended up to the screw head but shall be at least 1 mm longer than the penetration depth.

The shaft end shall correspond to figure 1, the diameter of the tip shall be 2,6 mm, tolerance h16.

### 5.3 Surface

Ski binding screws shall be coated or plated with materials which provide adequate protection against

corrosion and ensure a reproducible coefficient of friction.

For example, a suitable coating would be a zinc electroplated coating, Fe/Zn 5 c (see ISO 4042), having a clear chromate conversion coating and a minimum local thickness of  $5 \mu\text{m}$  (batch average  $4 \mu\text{m}$  min.,  $6 \mu\text{m}$  max.), when measured on the top surface of the screw head.

During electroplating, adequate precautions shall be taken to avoid hydrogen embrittlement.

### 5.4 Strength requirements

5.4.1 The breaking moment for ski binding screws under a torque of the same axis and direction as the driving torque shall be not less than 10 N·m.

5.4.2 When subjected to the ductility test, screws shall not break.

### 5.5 Typical application characteristics

The specified fastening and mounting characteristics of the screw are based on a uniform drill diameter of 4,1 mm H12.

#### 5.5.1 Mounting characteristics

The screw tested shall obtain the following values without damage to the screw head:

Driving torque: 3,3 N·m max.

Stripping torque: 5 N·m min.

#### 5.5.2 Fastening characteristics

The mean static pull-out resistance shall correspond to at least that of a reference screw complying with the requirements of ISO 1478, type F, and having a diameter of 5,5 mm.

Dimensions in millimetres

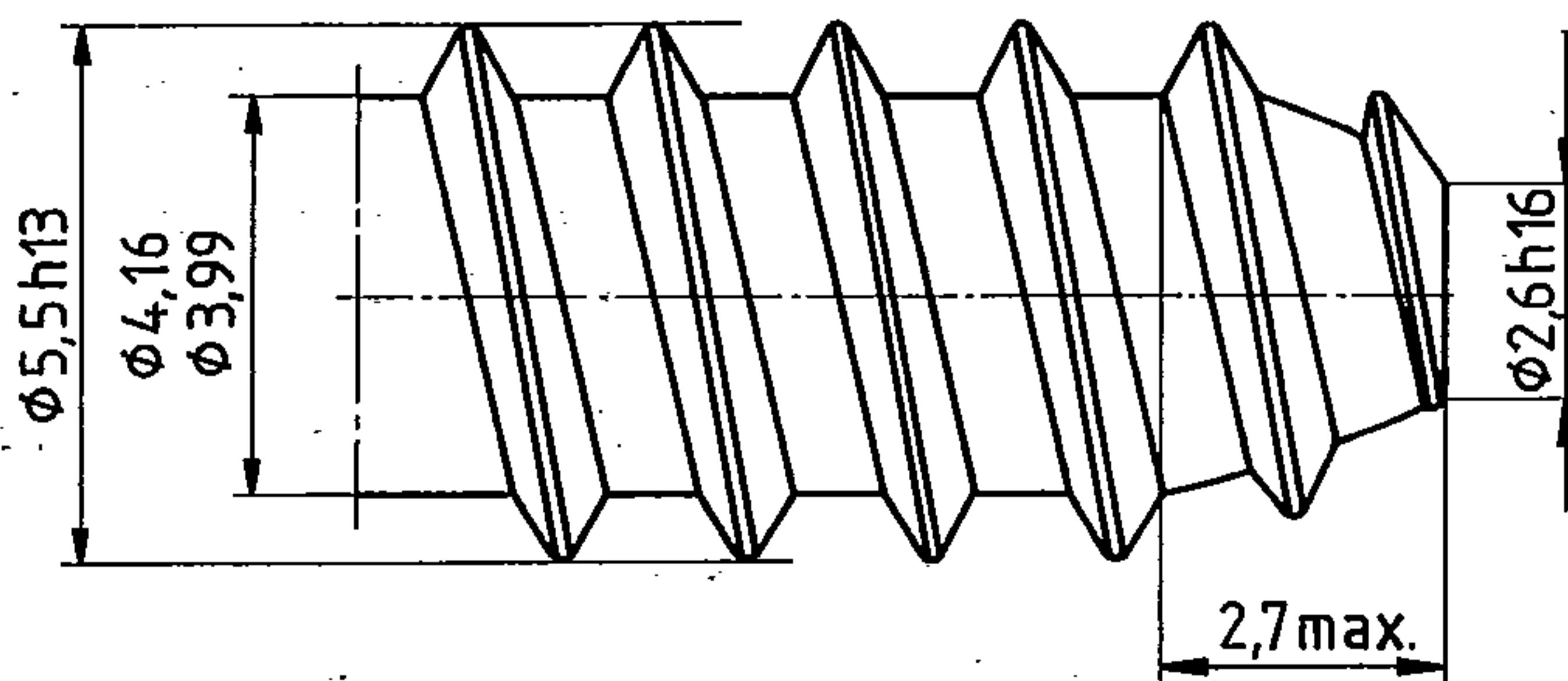


Figure 1 — Thread and end configuration

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**Descriptors:** sports equipment, skis, alpine skis, screws, fastenings, assembling, specifications, dimensions, mechanical properties.

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