
International Standard



6004

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Alpine skis — Ski binding screws — Requirements

Skis alpins — Vis de fixation de skis — Spécifications

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Descriptors : sport equipment, alpine skis, screws, screw threads, specifications, designation, dimensions, mechanical properties, assembling.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6004 was developed by Technical Committee ISO/TC 83, *Sports and recreational equipment*, and was circulated to the member bodies in March 1979.

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It has been approved by the member bodies of the following countries:

Austria	Italy	Switzerland
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No member body expressed disapproval of the document.

Alpine skis — Ski binding screws — Requirements

0 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 hence, be avoided. Additionally, 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 driving torque — stripping torque ratio, which is essentially more advantageous than that of the commonly used tapping screws, will enable adjustable torque-limiting screw-drivers to be set uniformly, therefore, reducing the danger of thread stripping. The use of the Posidriv cross recess No 3 screw also contributes significantly to a considerable simplification of the binding mounting procedure.

1 Scope and field of application

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

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

2 References

ISO 1478, *Tapping screw thread — Dimensions in millimetres and inches.*¹⁾

ISO 4042, *Threaded components — Electroplated coatings.*²⁾

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

3 Definitions

For the purpose 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 prehension.

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.

1) At present at the stage of draft. (Revision of ISO/R 1478-1970.)

2) At present at the stage of draft.

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 Designation

Ski binding screws shall be designated by :

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

The use of this designation system shall only apply to screws which comply with the requirements of clause 5.

Example :

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

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

5 Requirements

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

5.1 Materials

Any material complying with the requirements of 5.3 and 5.4 may be used (for example, case hardened or heat treated steels).

5.2 Dimensions

5.2.1 Screw head

Ski binding screws shall have a maximum head diameter of 10 mm and be Posidriv cross recess No. 3 type with a recommended minimum penetration depth of 2,7 mm.

If screws having countersunk heads are used, the angle of countersinking should be as specified in the appropriate International Standard.

5.2.2 Thread and end configuration

Within the maximum major diameter of 5,5 mm according to the figure the cross section of the screw may be circular or non circular.

Irrespective of the shaft length, the thread length shall be at least 1 mm longer than the penetration depth. The tolerance on the length of the screw shall be $\pm 0,8$ mm.

The shaft end shall correspond to the figure.

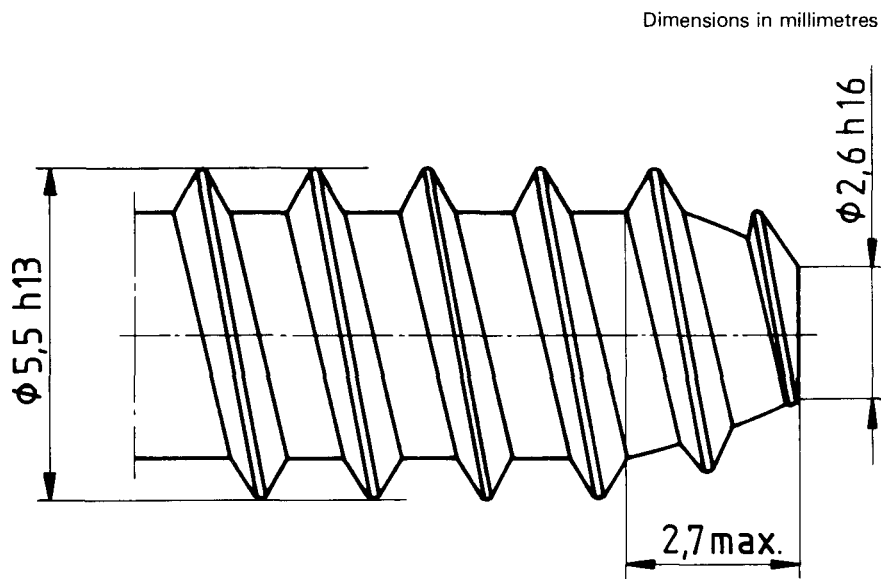


Figure — Thread and end configuration

NOTE — The thread and end configuration is designed in such a way that the screw guarantees the mountability required by 5.5.1 and fulfils the requirements of 5.5.2 when tested by the method specified in ISO 6005.

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 µm (batch average 4 µm minimum, 7 µm maximum), 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 same axis and direction as 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

In the test the screw 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 B, and having a diameter of 5,5 mm, a thread pitch of 1,81 mm and a symmetrical flank angle of 60°.

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