

International Standard



7794

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Cross-country skis — Ski binding screws — Requirements

Skis de fond — Vis de fixation — Spécifications

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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 developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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 7794 was developed by Technical Committee ISO/TC 83, *Sports and recreational equipment*, and was circulated to the member bodies in May 1983.

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

Austria	India	Sweden
Czechoslovakia	Italy	USA
Finland	Japan	USSR
France	New Zealand	
Germany, F.R.	South Africa, Rep. of	

The member body of the following country expressed disapproval of the document on technical grounds:

Poland

Cross-country 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, different recommendations by the manufacturers will no longer be required and mistakes or improper mounting, caused by differences in instructions, will 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 with proper location of reinforcement parts to make optimum use of 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 universal use of the Pozidriv¹⁾ cross recess No. 3 screw will also contribute significantly to a simplification of the binding mounting procedure.

1 Scope and field of application

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

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

2 References

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

ISO 7265, *Cross-country skis — Binding mounting area — Static screw retention strength — Requirements and test method*.²⁾

ISO 7795, *Cross-country 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 pre-tension.

3.2 penetration depth: The distance from the top surface of the ski to the deepest 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 test specimen without lubrication or tapping.

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) Pozidriv is a trade name for a commercially available product. At present, no other products intended for this purpose are known to be available commercially. This information is given for the convenience of the users of this International Standard and does not constitute an endorsement of this product by ISO.

2) At present in the stage of draft.

3.5 stripping torque: The maximum measurable moment which causes damage to the internal thread in the test assembly, 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 test assembly to a pull-out force applied to one screw quasistatically in the axial direction.

4 Designation

Cross-country ski binding screws in accordance with this International Standard shall be designated by:

- the words "cross-country ski binding screw" and the abbreviation "XCSBS";
- their nominal dimensions, i.e. diameter $\times$ length;
- the reference to this International Standard, i.e. ISO 7794.

Example:

Cross-country ski binding screws of nominal diameter 6,0 mm and length 17 mm, with countersunk heads would be designated:

**Cross-country ski binding screw
ISO 7794-XCSBS 6,0 $\times$ 17**

5 Requirements

The strength requirements and typical application characteristics are tested according to ISO 7795.

5.1 Material

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

5.2 Dimensions

5.2.1 Screw head

The screw head shall be a countersunk type head, with an angle of 90° and Pozidriv cross recess No. 3. The height of the head shall be 3 mm.

5.2.2 Thread and tip configuration

The maximum major diameter of the screw threads of circular cross-section, or the maximum outer diameter of the internal threads formed in the test specimen by non circular cross-section screws shall be 6,3 mm. The tolerance on the outer diameter shall be $-0,15$ mm.

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

The thread shall be extended up to the screw head. The tip may be tapered or tapered blunt. If tapered blunt, the diameter of the tip shall be 2,6 mm max. (see figure 1).

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 5c (see ISO 4042), having a clear chromate conversion coating and a minimum local thickness of 5 μ m (batch average 4 μ m min., 7 μ 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 Application characteristics

The specified fastening and mounting characteristics of the screw are based on a uniform drill hole diameter of 3,6 mm H12 ($+0,12$ mm).

5.4.1 Mounting characteristics

In the test the screw shall obtain the following values without damage to the screw thread:

Driving torque:	2 N·m max.
Stripping torque:	3 N·m min.

5.4.2 Fastening characteristics

The mean static pull-out resistance shall correspond to at least 90 % of the value measured with a reference screw ¹⁾.

1) For details concerning the reference screw see ISO 7265.