FINAL
DRAFT

INTERNATIONAL
STANDARD

**ISO/FDIS
11088**

ISO/TC **83**/SC **4**

Secretariat: **ASI**

Voting begins on:
2022-12-12

Voting terminates on:
2023-02-06

Alpine ski/binding/boot (S-B-B) system — Assembly, adjustment and inspection

Ensemble ski/fixation/chaussure (SFC) pour skis alpins — Montage, réglage et contrôle

Reference number
ISO/FDIS 11088:2022(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 83, *Sports and other recreational facilities and equipment*, Subcommittee SC 4, *Snowsports equipment*.

This seventh edition cancels and replaces the sixth edition (ISO 11088:2018), which has been technically revised.

The main changes are as follows:

— Table 1 on boot binding compatibility has been added;

— former Table A.1 on the determination of skier type (example 1) has been removed;

— 6.4 has been updated;

— Figure C.1 has been updated;

— normative references have been updated.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

International Standards exist for the components of the alpine ski/binding/boot (S-B-B) system, mainly intended for the component manufacturers. An International Standard, ISO 8061, also exists for the selection of release values.

This document is intended primarily for retailers. However, its aim is to include, in one text, the different phases of the choice of components, their assembly, adjustment and inspection in the form of practical procedures, and to provide tolerances for inspection and adjustment. It can be used by all individuals and institutions concerned with those procedures.

The inspection procedures and tolerances described in this document apply to the condition of the S-B-B system before it leaves the ski shop to judge the condition of the equipment once it is put into use and for periodic verification of used equipment.

Alpine ski/binding/boot (S-B-B) system — Assembly, adjustment and inspection

1 Scope

This document specifies assembly, adjustment and inspection procedures for the binding mechanisms of skis, integrating, in a practical way, the requirements of International Standards which are related to skis, bindings and boots.

It is applicable to a ski-binding-boot system (S-B-B) for alpine skiing, of which at least one component is owned by the user.

This document is applicable for complete and incomplete alpine ski-binding-boot systems which are owned by the user or rented for 15 days or more.

NOTE ISO 13993 gives a method of measurement for equipment which is rented for less than 15 days.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 5355, *Alpine ski-boots — Requirements and test methods*

ISO 8061:2019, *Alpine ski-bindings — Selection of release torque values*

ISO 8364, *Alpine skis and bindings — Binding mounting area — Requirements and test methods*

ISO 9462, *Alpine ski-bindings — Requirements and test methods*

ISO 9523, *Touring ski-boots for adults — Interface with touring ski-bindings — Requirements and test methods*

ISO 11087, *Alpine ski-bindings — Retention devices — Requirements and test methods*

ISO 11110, *Winter-sports equipment — Test devices for the setting of the functional unit ski/boot/binding — Requirements and tests*

ISO 13992, *Alpine touring ski-bindings — Requirements and test methods*

ISO 23223:2021, *Alpine ski boots with improved walking soles — Interface with alpine ski-bindings – Requirements and test methods*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
fitting adjustment
procedure required to obtain geometric compatibility and correct functioning of different components

3.2
indicator setting
Z-mark
release indicator value marked on the binding

Note 1 to entry: The binding shall be in accordance with ISO 9462.

3.3
skier type
release preference
release adjustment (3.7) criteria pertaining to the type of skiing to be undertaken, as assessed by the skier in accordance with Table A.1

Note 1 to entry: If the skier desires a setting outside the tolerances of this document, he or she can select such a setting at his or her own discretion. Ski-binding manufacturers should provide guidelines to shops and skiers regarding the recommended magnitude of such changes. Skiers should be clearly informed when these changes result in *release values* (3.5) above the upper limit or below the lower limit specified in ISO 8061.

3.4
initial indicator position
release indicator position of the binding corresponding with specific instructions

Note 1 to entry: The instructions shall be in accordance with Annex B.

3.5
release value
M_Z, M_Y
maximum torque or moment, M_Z and M_Y, for which the boot disconnects quasistatically from the binding

Note 1 to entry: Moment is the force couple and a torque is a force applied to a lever arm.

3.5.1
selected individual release value
reference value
torque or moment based on the skier's choice of skier type and skier's height and mass for which the boot disconnects from the binding

Note 1 to entry: The determination of selected individual release values shall be in accordance with ISO 8061.

3.5.2
measured release value
torque or moment for which the boot disconnects from the binding for a given S-B-B system

Note 1 to entry: It is expressed in newton metres.

Note 2 to entry: The procedure is given in 6.7.

3.6
inspection range
maximum acceptable difference between the *measured release value* (3.5.2) and the *selected individual release value* (3.5.1)

Note 1 to entry: It is specified as ±15 % of the selected individual release value, or ±3 Nm for twist and ±10 Nm for forward lean, whichever is greater, or one horizontal row up or down from the selected individual release value determined in Table B.1 or on the binding manufacturer's adjustment chart.

3.7
release adjustment
procedure for making the *measured release values* (3.5.2) coincide with the *selected individual release values* (3.5.1) within specific limits

Note 1 to entry: The limits shall be as stated in Table B.1.

3.8
trouble-shooting
additional procedures recommended by the equipment manufacturer in order to overcome observed functional problems

3.9
re-adjustment range
maximum acceptable difference between the *measured release value* (3.5.2) and the *selected individual release value* (3.5.1) that allows corrective actions

Note 1 to entry: It is specified ±30 % of the selected individual release value, or ±6 Nm for twist and ±20 Nm for forward lean, whichever is greater, or two horizontal rows up or down from the selected individual release value determined in Table B.1 or on the binding manufacturer's adjustment chart.

4 Principle

Follow the procedure shown in Annex C.

5 Skier's parameters

5.1 General

The selected individual release values shall be in accordance with ISO 8061. As the differences are insignificant, the following procedure, using discrete values, is an acceptable approximation.

5.2 Weight method

5.2.1 Determine the skier's parameters:

a) mass;

b) height;

c) type (in accordance with Annex A);

d) age;

e) boot sole length.

5.2.2 Using Table B.1, choose the individual release values of M_Z and M_Y.

6 Equipment parameters

6.1 Choice of new equipment

The components shall be in accordance with the following International Standards:

a) ISO 8364 for skis;

b) ISO 5355 and ISO 9523 for boots;

c) ISO 9462 and ISO 13992 for bindings;

d) ISO 11087 for brakes.

The skier should receive specific recommendations concerning the selection of boot, binding and ski, if they are provided by the manufacturer.

6.2 Visual inspection and preparation of used equipment

If any of the components of the S-B-B system have been used, the installer shall carry out a visual check according to the criteria below. In addition, older equipment can require special attention as specified by the manufacturer.

a) The edges and base of the ski should be properly prepared according to the recommendations of the ski manufacturer. Unused mounting holes, if any, shall be carefully filled in, according to the manufacturer's specifications.

b) The condition of the boot sole shall meet the binding manufacturer's requirements. All buckles, fasteners and support areas shall be in good condition.

   In cases where release is independent of the boot (e.g. some plate bindings), the inspection of the sole can be less exacting.

c) The condition of the binding components shall meet the binding manufacturer's requirements (i.e. no broken, deformed, missing or worn-out parts).

Component guides or rotation points shall be free-moving, free of obvious rust, corrosion and dirt, etc.

The manufacturer's inspection and maintenance instructions shall be observed (including lubrication).

The brake shall not be deformed. Suspect components shall be repaired or exchanged.

6.3 Assembly

When assembling the system, conform with the instructions of the binding and ski manufacturers and use the proper tools.

It is recommended to use a drill in accordance with Annex E. Once the holes are drilled, it is recommended that they be tapped and glue applied if required by the ski manufacturer. New holes shall not be drilled less than 10 mm from old holes (measured from centre of hole to centre of hole), even when they are filled in, unless otherwise specified by the ski or binding manufacturer.

When inserting the screws, take care not to damage the threads. A maximum tightening value of 4 Nm shall fulfil this requirement, unless otherwise specified by the ski manufacturer.

6.4 Compatibility and binding-to-boot fitting adjustments

Follow the binding manufacturer's instructions.

Unless specifically allowed by the boot manufacturer, replacement soles or parts shall be from the original boot manufacturer only.

All replaceable sole pads shall be according to the same International Standard, i.e. ISO 5355 or ISO 23223 or ISO 9523.

After the replacement of the sole pads, a release test of the ski/boot/binding system shall be performed.

After replacement of the sole pads, the boots that conform with ISO 23223 shall be marked according to ISO 23223:2021, Clause 5 d).

After replacing the soles, the compatibility shall be checked in accordance with Table 1.

Table 1 — Boot binding compatibility

Boot according (see marking on solepads +shell)	Compatible with bindings marked with (see AFD area)						
ISO 5355 - TYPE A	A	-	CA	A + ①	-	CA + ①	MN
ISO 5355 - TYPE C	-	C	CA	-	C + ①	CA + ①	-
ISO 23223 - TYPE A	-	-	-	A + ①	-	CA + ①	MN
ISO 23223 - TYPE C	-	-	-	-	C + ①	CA + ①	-
ISO 9523	-	-	-	-	-	-	MN

Key

AFD Antifriction device

MN Multinorm

① Logo or pictogram or colour code or the letter "W", identical to the one on a boot that conforms with ISO 23223

6.5 Initial indicator adjustment

The binding manufacturer shall provide a table similar to Table B.1 for his/her products.

Using Table B.1, adjust the bindings to the appropriate initial indicator position.

6.6 Functional check (inspection of functions)

Check visually that everything is according to the binding manufacturer's instructions and operates correctly.

Check if the boot returns quickly to its initial position within less than 2 mm after a sideward displacement of approximately 10 mm.

6.7 Measurement of release value

Precondition the binding by releasing each unit as required by the binding manufacturer.

Using a test device in accordance with ISO 11110, proceed as follows:

a) Follow the test device manufacturer's instructions and check the calibration of the test device according to the manufacturer's procedures.

b) Perform a measurement for $+M_Z$, $-M_Z$ and $+M_Y$ each.

c) Check that the measured $+M_Z$, $-M_Z$ and $+M_Y$ values are within the limits of the inspection range. If so, no further actions are required; proceed according to e). If the release measurements do not fall within the inspection range but within the accepted re-adjustment range, proceed according to d). If the release measurements do not fall within the inspection range and do not fall within the accepted re-adjustment range, proceed according to f).

d) The equipment manufacturers' instructions for trouble-shooting shall be followed. Re-adjustment of the binding shall be undertaken. These re-adjustments shall achieve measured values as close as practical to the selected individual release value, within the inspection range. If so, no further actions are required; proceed according to e).

e) If the measured $+M_Z$ and $-M_Z$ values fall near opposite limits of the inspection range, the manufacturer's procedure for evaluation of non-symmetrical release shall be implemented.

f) If the release values are out of the accepted re-adjustment range, the equipment manufacturers' instructions for trouble-shooting shall be followed before proceeding. If no instructions are provided, the person mounting the bindings shall conduct a clean versus lubricated diagnostic test in accordance with Annex D.