
Cross-country skis — Determination of mass and location of balance point

*Skis de fond — Détermination de la masse et de l'emplacement du
point d'équilibre*

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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 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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html. (standards.iteh.ai)

This document was prepared by Technical Committee ISO/TC 83, *Sports and other recreational facilities and equipment*, Subcommittee SC 04, *Snowsports equipment*.

This second edition cancels and replaces the first edition (ISO 7138:1984), which has been technically revised.

Cross-country skis — Determination of mass and location of balance point

1 Scope

This document specifies laboratory measurement methods for mass and location of the balance point of cross-country skis.

If laboratory measurement data are determined and published by manufacturers or other institutions, standard measurement procedures can be used to ensure comparability.

It is not the purpose of this document to evaluate the measurement data with regard to their influence on the quality of the ski.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

mass of the ski

mass of a finished manufactured ski without any mounted parts

3.2

balance point

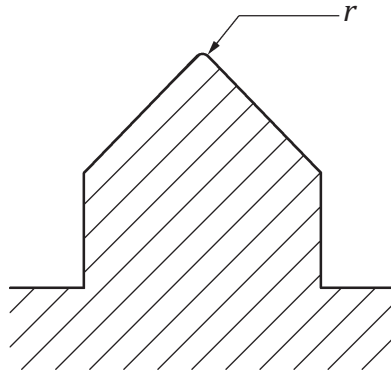
BP

line perpendicular to the centre line of the running surface at which the ski is in horizontal equilibrium (balanced) when placed on a fulcrum

4 Apparatus

- 4.1 **Weighing device**, accurate to ± 20 g.

4.2 **Horizontal fulcrum**, for the determination of the balance point as shown in [Figure 1](#).



Key

r radius 0,25 mm max.

Figure 1 — Fulcrum

5 Sampling and conditioning

In order to ensure comparability, it is recommended to use for publication only data of the following ski sizes:

- 150 cm, 180 cm or 200 cm.

From these three sizes, the one which is most representative for the intended application shall be selected for the ski model concerned.

All measurements shall be taken from a finished ski without any ancillary equipment.

All measurements shall be carried out on a ski which has been conditioned at a temperature of $(20 \pm 2) ^\circ\text{C}$ for at least 2 h.

6 Procedure

6.1 Weigh the ski, to the nearest 20 g, with the weighing device (see [3.1](#)).

6.2 Place the ski on the fulcrum (see [3.2](#)) and determine the balance point.

Indicate the location of the balance point by its distance, X_{BP} , from the rear end of the ski as shown in [Figure 2](#).

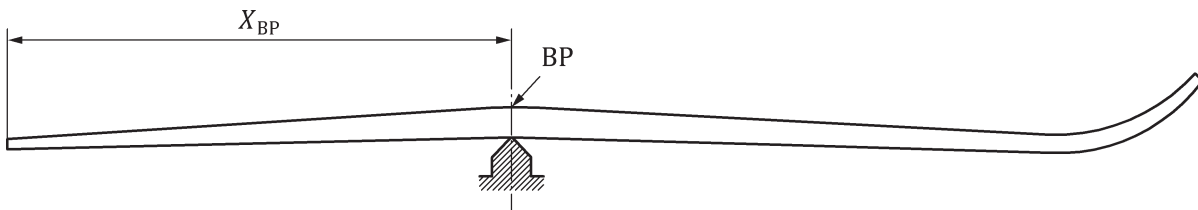


Figure 2 — Distance of the balance point from rear end of ski

7 Expression of results

7.1 Report the mass of the ski in grams.

7.2 Report the balance point by indicating the distance, X_{BP} .

8 Tolerances

If data are published by the manufacturer with reference to this document, the following tolerance ranges shall be observed:

- mass: $\pm 10\%$;
- balance point: distance from the ski end $\pm 2\%$.

9 Test report

The test report shall include at least the following particulars:

- a) a reference to this document, i.e. ISO 7138:2017;
- b) name of distributor or manufacturer;
- c) trade mark and model designation;
- d) nominal length;
- e) imprinted serial number;
- f) test results (see [Clause 6](#));
- g) any deviation from this document with an explanation of the reason for the deviation.

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