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## Alpine skis — Determination of deformation load and breaking load

*Skis alpins — Détermination de la charge de déformation et de la  
charge de rupture*

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

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.

ISO 6265 was prepared by Technical Committee ISO/TC 83, *Sports and recreational equipment*, Subcommittee SC 4, *Snowsports equipment*.

This third edition cancels and replaces the second edition (ISO 6265:1992), which has been technically revised.

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# Alpine skis — Determination of deformation load and breaking load

## 1 Scope

This International Standard specifies a method for determining the resistance of alpine skis to permanent deformation and breaking. In this International Standard no attempt is made to relate the measurement data to the quality of the ski.

It is applicable to all alpine skis for adults, juveniles and children.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness)*

## 3 Terms and definitions (standards.iteh.ai)

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

### 3.1 deformation load

$F_D$

load which, when applied at the load application point, causes a permanent deformation of 1 mm of the ski between the supports

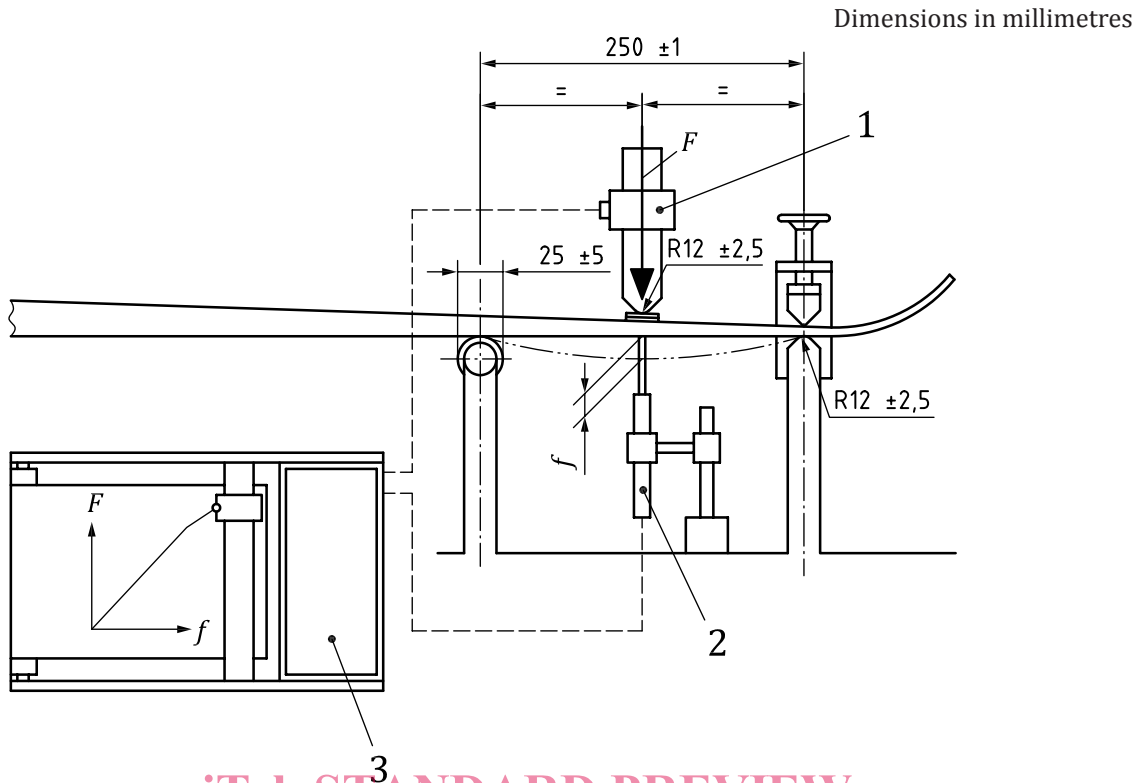
### 3.2 breaking load

$F_B$

maximum load which, when applied at the load application point, causes failure of the ski (breaking, delamination, buckling, etc.)

## 4 Testing machine

The general arrangement of the bending testing machine is shown in [Figure 1](#).



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**Key**

- 1 dynamometer
- 2 displacement measurement gauge
- 3 recorder

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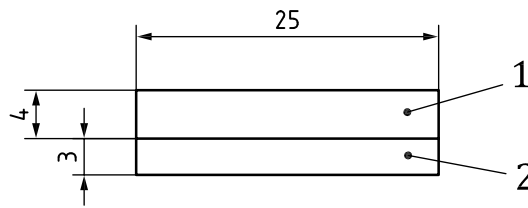
**Figure 1 — Testing machine**

The bending testing machine (universal tension and compression testing machine with bending fixture) shall comprise:

- a) two specimen supports, at least 250 mm apart, at least one of which shall be a low friction roller;
- b) a dynamometer, having a range of at least 20 000 N, for measurement of the load,  $F$ ;
- c) a displacement measurement gauge for the deflection,  $f$ .

The load shall be applied to the ski via a ram plate (see [Figure 2](#)), which shall consist of a steel plate, 4 mm thick, and a hard rubber layer, 3 mm thick and having a Shore A hardness of  $95 \pm 5$ . Hardness shall be determined in accordance with ISO 868.

Dimensions in millimetres

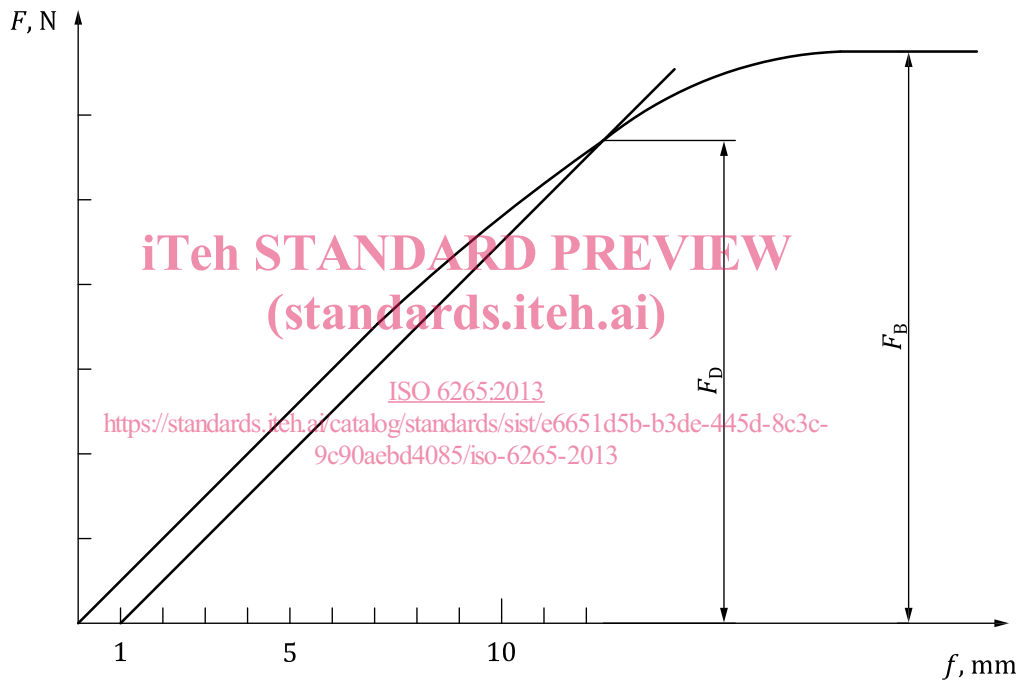


**Key**

- 1 steel plate
- 2 hard rubber

**Figure 2 — Ram plate**

Measurement data shall be recorded by means of a load-displacement recorder (see [Figure 3](#)).



**Key**

- $F$  load
- $f$  deflection
- $F_D$  deformation load
- $F_B$  breaking load

**Figure 3 — Typical load-deflection curve and method of evaluation**

The specimen supports, as well as the ram plate, shall reach over the whole width of the ski.

**5 Determination of the load application point**

The test shall be carried out at the load application point with a separation between the supports of 250 mm ± 0,5 mm.

Determine the load application point by moving the ski in a longitudinal direction on the supports until a deflection of:

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2 mm ± 0,03 mm – for group 1;

4 mm ± 0,03 mm – for group 2;

6 mm ± 0,03 mm – for group 3;

8 mm ± 0,03 mm – for group 4;

is obtained under a load of 600 N ± 5 N.

If under this procedure more than one load application point can be determined, the load application point which is nearest to the front shall be used.

## 6 Conditioning

Condition the ski at a temperature of 23 °C ± 5 °C.

## 7 Test procedure

Insert the ski in the testing machine and fix it on the supports in such a way that the load application point is located midway between the supports.

It is important that the stiffness of the ski at the load application point lies within the tolerance range of ± 3 %.

NOTE Testing at positions other than the load application point will result in false values for the deformation load and the breaking load.

Load the ski at a rate sufficient to increase the deflection by 25 mm/min, until the ski breaks.

Record the load-deflection values by means of the load-displacement recorder.

## 8 Evaluation

Determine the deformation load and the breaking load from the load-deflection chart above (see [Figure 3](#)).

### 8.1 Deformation load

From the point of the abscissa corresponding to a 1 mm deflection, draw a straight line parallel to the linear portion of the load-deflection curve. The value of the deformation load,  $F_D$ , is given by the point of intersection of this line with the curve (see [Figure 3](#)).

### 8.2 Breaking load

The breaking load,  $F_B$ , is the maximum load measured during the test, i.e. the maxima of the curve.

## 9 Test report

The test report shall include the following information:

- reference to this International Standard, i.e. ISO 6265;
- the brand of ski tested;
- the designation of the model;
- the group of the ski according to ISO 8364;
- the manufacturer's registration number;



- f) the load-deflection chart together with the deformation and breaking loads;
- g) any deviation from the procedure of this International Standard and the reasons for this deviation.

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