



# SLOVENSKI STANDARD

## SIST ISO 9465:2013

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Nadomešča:  
SIST ISO 9465:1995

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**Varnostne vezi za alpske smuči - Bočno odpiranje pri udarni obremenitvi -  
Preskusna metoda**

Alpine ski-bindings -- Lateral release under impact loading -- Test method

**iTeh STANDARD PREVIEW**

Fixations de skis alpins -- Déclenchement latéral sous choc -- Méthode d'essai

**Ta slovenski standard je istoveten z: ISO 9465:2012**

[SIST ISO 9465:2013  
https://standards.iteh.ai/SIST/ISO/9465/2013/66-466b-b704-  
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**ICS:**

97.220.20      Oprema za zimske športe      Winter sports equipment

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2012-06-15

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**Alpine ski-bindings — Lateral release  
under impact loading — Test method**

*Fixations de skis alpins — Déclenchement latéral sous choc —  
Méthode d'essai*

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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 9465 was prepared by Technical Committee ISO/TC 83, *Sports and recreational equipment*, Subcommittee SC 4, *Snowsports equipment*.

This second edition cancels and replaces the first edition (ISO 9465:1991), which has been technically revised.

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**ISO 9465:2012(E)****Introduction**

This International Standard is one of a series dealing with the safety of ski-bindings. The other current International Standards are ISO 8061 and ISO 9462.

National standards, complying with legal regulations, may be more extensive, for instance covering combined loading and ski deflection. International Standards are being prepared that address these aspects. To verify the safety of ski-bindings, it is necessary to use all International Standards of the series and additionally the national standards covering those aspects which are not yet standardized internationally.

The release and retention functions of ski-bindings are multifaceted and complex. The functions involve combinations of static and dynamic loading in varied release directions of the boot relative to the ski. This impulsive test method evaluates an important ski-binding function, but it should not be interpreted as conclusively evaluating the binding impulse release behaviour in general. The test evaluates the release and retention function of the binding in a single mode of binding release; other static and dynamic retention and release tests are not excluded by this standard test.

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# Alpine ski-bindings — Lateral release under impact loading — Test method

## 1 Scope

This International Standard defines an impact test for establishing the maximum impulse for retention of a test ski on the test sole in the lateral direction.

The test provides a measure of the release/retention boundary for lateral release of a ski-binding for adults (type A according to ISO 9462) at a particular ski-binding setting.

The test method is designed to simulate the lateral impulsive loading during skiing located at the front part of the ski. The test permits the evaluation of a ski-binding's release and retention properties under expected loading rates. The test permits comparison of the release caused by lateral impulse to the ski for different binding system designs.

## 2 Normative references

The following referenced documents are indispensable for the application 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 9462:—<sup>1)</sup>, *Alpine ski-bindings — Requirements and test methods*

ISO 9838, *Alpine and touring ski-bindings — Test soles for ski-binding tests*

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## 3 Terms and definitions

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

### 3.1

#### **contact material**

material interface between the pendulum contact tip and the side wall of the test ski

NOTE The contact material specification in conjunction with the pendulum release angle determines the duration and the magnitude of the impulse force during the impact test.

### 3.2

#### **impact force**

force, the duration of application of which is short compared with the response time of the ski-binding/pendulum system

1) To be published.

**ISO 9465:2012(E)****3.3****impulse**

product of mass and velocity of the impact parts

NOTE According to Newton's second law of motion:

$$m \times v = F \times \Delta t$$

where

$F$  is the force;

$\Delta t$  is the period of time of the contact of force;

$m$  is the mass;

$v$  is the velocity of the impact.

**3.4****test ski**

aluminium U-shaped channel

NOTE 1 The tip and the tail of the test ski refer to the extreme points along the length of the channel in front of and behind the ski-binding that is mounted on the channel.

NOTE 2 The test ski is described in 4.2.1.

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**3.5****test sole**

sole in accordance with ISO 9838, backed by a steel plate

NOTE The test sole is described in 4.2.2.

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**3.6****goniometer**

instrument used to measure the angle of the pendulum shaft relative to the vertical equilibrium axis at the pendulum bearing

**3.7****pendulum shaft**

long, circular cylinder connecting the pendulum block to the pendulum bearing

**3.8****contact tip**

steel hemispherical tip on the pendulum bearing

**3.9****pendulum block**

rigid mass on the free end of the pendulum shaft, upon which the contact tip is rigidly mounted

**3.10****impact location**

point on the test ski side wall where the impact occurs

**3.11****binding release**

condition whereby the binding has released the test ski from the test boot

NOTE Binding release is defined by either

a) the test ski separating completely from the test boot, or



- b) the test ski being offset from the boot toe by 5 mm or more and no visible recentering of the test ski on the test boot being observed for a period of up to 10 s,

when an impact test is carried out.

### 3.12

#### pendulum tower

structure supporting the pendulum bearing, shaft and block

### 3.13

#### pendulum release angle

$\theta_{rel}$

angle between the pendulum shaft and the vertical when the pendulum shaft is released from the rest

### 3.14

#### pendulum bearing

bearing mounted on the pendulum tower, supporting the pendulum shaft

### 3.15

#### sole support

structure required to hold and position the test sole rigidly

### 3.16

#### pendulum rebound angle

maximum angle between the pendulum shaft and the vertical, following impact of the contact tip and contact material during a test

### 3.17

#### percentage rebound

percentage rebound is given by the following relative value,  $R$

$$R = \frac{[1 - \cos(\theta_{reb})]}{[1 - \cos(\theta_{rel})]} \times 100, \text{ in \%}$$

where

$\theta_{reb}$  is the pendulum rebound angle;

$\theta_{rel}$  is the pendulum release angle.

## 4 Test method

### 4.1 Principle

The ski-binding is mounted on a standard test ski. The ski release binding is adjusted for a static release in accordance with ISO 9462:—, 6.4. The release setting is recorded.

The test ski is mounted on the test sole. The sole is rigidly fixed during testing.

The contact material between the test ski and the pendulum impact is as specified in 4.2.7.

The standard pendulum applies impulsive loading to the test ski at the lowest point of the pendulum arc.

The pendulum pivot friction and the contact material are evaluated according to 4.2.6.2 and 4.2.7.3 prior to and following the test of ski release bindings. Records of the evaluations are maintained.

The pendulum release angle is decreased from a value sufficient to guarantee release of the binding following a single impact of the test ski until the maximum angle for which retention of the binding is obtained. The release angle causing the ski-binding to release at the release/retention boundary is recorded.