INTERNATIONAL STANDARD

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Rental ski shop practice — Sampling and inspection of complete and incomplete alpine ski-binding-boot systems in rental applications

Pratique pour la location dans les commerces de matériel de ski — Échantillonnage et contrôle des ensembles complets ou incomplets ski/fixation/chaussure dans les applications de location

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 13993 was prepared by Technical Committee ISO/TC 83, *Sports and recreational equipment*, subcommittee SC 3, *Ski bindings*.

Annex A forms a normative part of this International Standard.

Introduction

The intent of this International Standard is to provide guidelines for performing functional inspections and adjustments of alpine ski-binding-boot systems. Adhering to these guidelines may help to reduce the risk of injuries resulting from improper mechanical functioning of releasable binding systems. However, skiing involves inherent and other risks. Injury can result from simply falling down, impact with an object or from many other actions. Many injuries are unrelated to binding function. Furthermore, even a properly functioning binding cannot release under all injury-producing loads. Therefore, the attention of the user of this International Standard is drawn to the fact that compliance with these guidelines in no way guarantees that injury can be prevented.

Rental ski shop practice — Sampling and inspection of complete and incomplete alpine ski-binding-boot systems in rental applications

1 Scope

This International Standard specifies a uniform method for the sampling and inspection of complete and incomplete alpine ski-binding-boot systems used in rental operations.

This International Standard is intended for any facility which rents complete and incomplete alpine ski-boot-binding systems as for example when the skier owns the boots.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 5355, *Alpine ski-boots — Safety requirements and test methods*

ISO 8061, *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 — Safety requirements and test methods*

ISO 11088, *Assembly, adjustment and inspection of an alpine ski/binding/boot (S-B-B) system*

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

3 Terms and definitions

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

3.1
system
group of interacting components, usually comprised of a ski, boot and binding; designed to perform a retention and a release function

3.2
complete system
ski-boot-binding system where all the components are owned by the rental facility

3.3
incomplete system
ski-boot-binding system where some components (boot or ski/binding) are owned by the customer

3.4
interchangeable
applies to the free exchange of boots within a rental inventory without testing each new combination of system components

3.5
non-interchangeable
applies to the establishment of specific binding-boot combinations tested each time a new combination is created

3.6
reference binding
unit that is typical of the bindings in the inventory

3.7
reference boot
boot that is typical of the boots in the inventory and satisfies the requirements of A.1.3

3.8
indicator setting
setting displayed on the binding's release adjustment scale

3.9
initial indicator setting
release indicator setting derived from the binding manufacturer's adjustment chart

3.10
measured release value
release moment determined by the use of a test device of the type defined in annex A (see 3.11)

3.11
test result
middle quantitative value of three repetitions of the same test

3.12
selected reference moment
nominal release moment derived from a document compatible with ISO 8061 or information supplied by the binding or test device manufacturer

NOTE In the case where an algorithm or a table is used to provide reference moments, either value may be used. Any difference in values is usually insignificant.

3.13
inspection tolerance
accepted difference between the reference moment and the test result; it is ± 15 % of the reference moment, or ± 3 Nm for twist and ± 10 Nm for forward lean, whichever is greater, or 1 line up or down from the selected reference moment determined on the binding manufacturer's adjustment chart, and is used as the criteria for prompting consultation of the binding manufacturer's troubleshooting procedures or application of a correction factor, should procedures not be available

3.14
limit for correction
accepted difference between the reference moment and the test result(s), ± 30 % of the reference moment, or ± 5 Nm for twist and ± 20 Nm for forward lean, whichever is greater, or 2 lines up or down from the selected reference moment; it is used as the upper limit for application of a correction value

3.15
lubricated binding test
release test where the boot/binding interfaces are lubricated

3.16
clean versus lubricated tolerance
accepted difference between the test results with the clean and the lubricated binding, defined as not more than 20 % of the clean binding test, used whenever a functional test for binding-boot compatibility is required

3.17
inward versus outward tolerance
accepted difference between test results about an axis perpendicular to the plane of the ski, usually from the toe-piece component, and defined as within the inspection tolerance

3.18
troubleshooting
binding manufacturer's recommendations or procedures for analysing system failure

3.19
corrective action
procedures other than readjustment of the indicator setting to include repair or replacement of system components

3.20
correction value
value which must be added to or subtracted from the initial indicator setting to bring the test result within the inspection tolerance

3.21
rental skier day
number of rental skiers (units) processed through a ski rental facility in a 24 h-period

3.22
random sampling
procedure in which every sampling unit in the inventory has an equal chance of being included in the sample

3.23
deviation
difference between the measured moment and the selected reference moment, expressed as a percentage of the selected reference moment

3.24
class I deviation
minor deviation that does not require corrective action, defined as ± 16 % to ± 30 %, or 2 lines up or down from the selected reference moment

NOTE Class I deviations are used to determine the frequency of sampling.

3.25
class II deviation
deviation that prompts inspection of the entire inventory and corrective action, defined as ± 30 % to ± 45 %, or 3 lines up or down from the selected reference moment

3.26
class III deviation
major deviation that prompts corrective action and a review of all procedures, defined as more than ± 45 %, or more than 3 lines up or down from the selected reference moment

NOTE The in-season sampling and inspection programme is designed to render the occurrence of a class III deviation unlikely.