~~Designation:F1061–97(Reapproved 2003)~~

# ~~Specification for~~ Designation: F 1061 – 08

# Standard Specification for Ski Binding Test Devices[1]

This standard is issued under the fixed designation F 1061; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

## INTRODUCTION

The purpose of this specification is to aid in the selection of ski binding test devices appropriate for the needs of ski equipment sales and rental facilities. Devices which meet this specification exceed the requirements of ~~ASTM~~ Practices ~~F1063, F1064, and F1065~~F 1063 and F 1064. Therefore, a device that does not meet this specification may still satisfy the requirements of ~~ASTM~~ Practices ~~F1063, F1064, and F1065~~F 1063 and F 1064.

## 1. Scope

1.1 This specification covers requirements for devices used to determine the release moments of ski equipment in retail sales and rental facilities.

1.2 This specification is applicable to the manufacture, repair, and calibration of such devices.

1.3 This specification is to be used with Test Method F 1062.

1.4 The values expressed in ~~dekanewton~~newton metres, ~~dekanewtons,~~newtons, and centimetres are to be regarded as the standard.

~~1.5The~~1.5 The values expressed in units of torque may be converted to the appropriate force values when devices that indicate force are used.

## 2. Referenced Documents

2.1 *ASTM Standards:* [2]

E 456 ~~Terminology for Relating to Quality and Statistics~~ Terminology Relating to Quality and Statistics

F 504 Test Method for Measuring the Quasi-Static Release Moments of Alpine Ski Bindings

F 939 Practice for Selection of Release Torque Values for Alpine Ski Bindings

F 1062 Test Method for Verification of Ski Binding Test Devices

F 1063 Practice for Functional Inspections and Adjustments of Alpine Ski/Binding/Boot Systems

F 1064~~Practice for Sampling and Inspection of Complete and Incomplete Alpine Ski/Binding/Boot Systems in Rental Applications~~

~~F1065Practice for Inspection of Incomplete Alpine Ski/Boot/Binding Systems in Rental Applications~~ Practice for Sampling and Inspection of Complete and Incomplete Alpine Ski/Binding/Boot Systems in Rental Applications

2.2 *ISO Standard:*

8061 Method for the Selection of Release Torque Values[3]

## 3. Terminology

3.1 The terms and abbreviations used in this document are defined in Terminology E 456, Test Method F 504, and Test Method F 1062.

---

[1] This specification is under the jurisdiction of ASTM Committee F27 on Snow Skiing and is the direct responsibility of Subcommittee F27.10 on Binding Test Procedures.

~~Current edition approved Feb. 10, 2003. Published May 2003. Originally approved in 1990. Last previous edition approved in 1997 as F1061–97.~~

Current edition approved Jan. 1, 2008. Published February 2008. Originally approved in 1990. Last previous edition approved in 2003 as F 1061 – 97 (2003).

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

3.2 Terms and abbreviations used in this document are repeated here for convenience. Refer to Test Method F 1062 for equations.

3.2.1 *a*—the difference between the calibration of the specific device tested for agreement with an instrument of the type described in Test Method F 504, and the calibration of an individual device of the same design.

3.2.2 *d*—the agreement between the test device and the standard apparatus described in Test Method F 504.

3.2.3 *r*—the imprecision of the device tested.

3.2.4 *Recommended Operating Range (ROR)*— the portion of the full range of the test device which is in compliance with this specification.

3.2.5 *Operating Range (OR)*—the portion of the full range of the test device which may be employed in compliance with Practices ~~F1063, F1064, and F1065~~F 1063 and F 1064. OR shall be defined by the user in accordance with the section on Inspection in Annex A1 of Practice F 1063, or in the section on Inspection in Annex 2 of Practice F 1064.

3.2.6 *M1*—a moment in a horizontal plane as defined in Fig. 1b of Test Method F 504.

3.2.7 *M3*—a moment in a vertical plane with the ski as defined in Fig. 1b of Test Method F 504.

3.2.8 *reference binding*—a binding (or group of bindings) used in the verification of a test device.

3.2.9 *standard apparatus*—laboratory equipment including a test frame and instrumentation (see Test Method F 504) used as the basis of comparison with the test device.

3.2.10 *test device*—a machine for determining the release moments of ski/boot/binding systems.

## 4. Classification

4.1 *Type I*—a device capable of indicating both positive and negative release moments ($M_z$).

4.1.1 *Type IA*—a Type I device with specified limits of linear displacement or angular deflection.

4.1.2 *Type IB*—a Type I device limited in use to a specified binding or group of bindings.

4.2 *Type II*—a device capable of indicating both positive and negative release moments ($M_y$).

4.2.1 *Type IIA*—a Type II device with specified limits of linear displacement or angular deflection.

4.2.2 *Type IIB*—a Type II device limited in use to a specified binding or group of bindings.

4.3 *Type III*—a device other than Type I or Type II with specified capability.

## 5. Selection of Reference Bindings

5.1 A binding (designation B, 4.1.2, 4.2.2) or group of bindings shall be selected by the test device manufacturer which are appropriate for the type of equipment defined by the test device classification. For designations other than B (4.1.2, 4.2.2), six bindings from at least three binding manufacturers will be used.

NOTE 1—Test Method F 504 may be used to select reference bindings which are typical of bindings in common usage.

## 6. Performance Requirements

6.1 The test device shall be of a design such that when tested by Test Method F 1062 (Section 8 and 9.3) will meet the following requirements:

6.1.1 *Type I (d)*—not greater than ±5 %~~or ±0.25 daNm,~~[5] [4] or ±2.5 Nm,[4] whichever is greater, for the reference binding(s) as a group and not more than ±7½ %~~[5] or 0.38 daNm,~~[5] %[4] or 3.8 Nm,[4] whichever is greater, for any one binding in a group of two or more reference bindings.

6.1.2 *Type II (d)*—not greater than ±5 %[4] or ~~±1 daNm,~~[5] ±10 Nm,[4] whichever is greater, for the reference binding(s) as a group and not more than ±7½ ~~%[5] or 1.5 daNm,~~[5] %[4] or 15 Nm,[4] whichever is greater, for any one binding in a group of two or more reference bindings.

6.1.3 *Type III (d)*—not greater than ±5 %.[4]

6.2 The test device shall be of a design such that repeatability, when tested by Test Method F 1062 (Section 8 and 9.4) with a single operator is as follows:

6.2.1 *Type I (r)*—not greater than 3 %[4] or ~~0.15 daNm,~~[5] 1.5 Nm,[4] whichever is greater, for the reference bindings as a group.

6.2.2 *Type II (r)*—not greater than 3 %[4] or ~~0.6 daNm,~~[5] 6 Nm,[4] whichever is greater, for the reference bindings as a group.

6.2.3 *Type III (r)*—not greater than 3 %[4]for the reference bindings as a group.

6.3 The device shall be calibrated before end use using Test Method F 1062 (Section 8.2.1) and meet the following tolerances:

6.3.1 *Type I (a)*—not greater than ±2.5 % or ~~±0.13 daNm,~~±1.3 Nm, whichever is greater, over the ROR.

6.3.2 *Type II (a)*—not greater than ±2.5 % or ~~±0.5 daNm,~~±5 Nm, whichever is greater, over the ROR.

6.3.3 *Type III (a)*—not greater than ±2.5 % over the ROR.

6.4 The magnitude of the smallest scale increment, which can normally be estimated, shall not exceed the following:

6.4.1 *Type I*—five percent of the smallest value in the ROR or ~~0.13 daNm,~~1.3 Nm, whichever is greater.

6.4.2 *Type II*—five percent of the smallest value in the ROR or ~~0.5 daNm,~~5 Nm, whichever is greater.

---

~~[4] Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.~~

[4] Average over ROR.