

Standard Test Method for Measuring the Quasi-Static Release Moments of Alpine Ski Bindings¹

This standard is issued under the fixed designation F 504; 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.

1. Scope

1.1 This test method covers a procedure for the measurement of release moments of ski bindings under conditions where inertia loadings of the ski binding system are not significant.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

F 498 Test Method for Center Spring Constant and Spring Constant Balance of Alpine Skis²

F 779 Test Method for Torsion Characteristics of Alpine Skis²

F 944 Specification for Properties of Adult Alpine Ski Boots²

2.2 ISO Standard:

ISO 9838³

ISO 9462³

ISO 9465³

3. Terminology

3.1 The following terminology is introduced with reference to the sketch of the boot-ski system shown in Fig. 1.

3.1.1 Six points of load application to the standard test ski are required. With the adult boot sole (300 mm in length) the most forward point, located at a position 90 ± 0.5 cm from the centerline of the test shaft, shall be called the “forward point” and shall be designated as *F*. The second point, 45 ± 0.5 cm in front of the centerline of the test shaft, shall be designated the “near point,” *N*. The third point, located 45 ± 0.5 cm behind the centerline of the test shaft, shall be designated “rear point,” *R*.

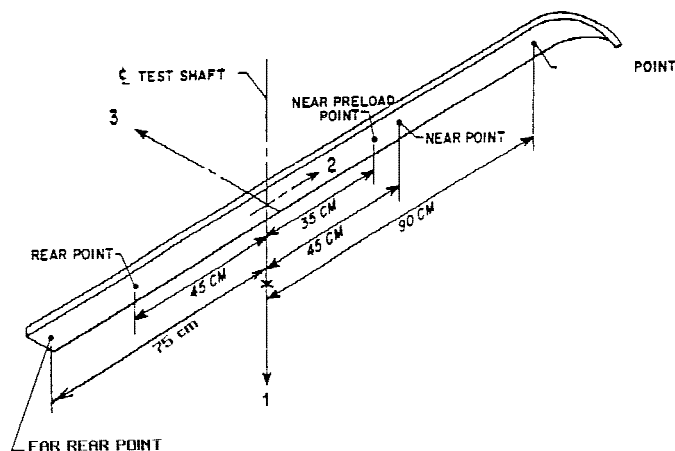


FIG. 1 Load Application

The fourth point, located 35 ± 0.5 cm in front of the center line of the test shaft, shall be designated the “near preload point,” *NP*. The fifth point, located 75 ± 0.5 cm behind the centerline of the test shaft shall be designated the “far rear point,” *FRP*. The sixth point, the “alternate near preload point,” *ANP*, is located 7.5 ± 0.25 cm, in the minus *y*-direction from the point *NP*. For sole lengths longer than 300 mm the *F* and *FR* points are not changed from the location used for the 300 mm boot sole. For sole lengths shorter than 300 mm the *N*, *R*, *ANP* and *NP* points are not changed from the location used for the 300 mm sole. For bindings which are to be used exclusively with skis shorter than the test ski, *F* and *FR* tests shall be performed at the *N* and *R* points. If the ski is too short for the specified *N* and *R* points, *N* and *R* shall be moved closer to the *z* axis by 10 cm each, and all tests performed using the new *N* and *R* points. The forces that are applied to the standard ski at these six designated points may now be described by simple vector notation. A laboratory-fixed axis designation shall be used with the numeral *z* denoting the vertical axis normal to the top face of the ski (in the region of the test shaft) and positive in the direction outward from the ski; the numeral *x* denoting the longitudinal axis, positive in the forward direction of the ski; and the numeral *y* denoting the lateral axis, the positive direction of which is determined by the right-hand rule. The *z* axis is coincident with the centerline of the test shaft. The origin of XYZ coordinate system taken to be a point 230 mm

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² *Annual Book of ASTM Standards*, Vol 15.07.

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