



Designation: F 474 – 98

Standard Specification for Static Screw-Retention Strength of Binding Mounting Area on Alpine Skis¹

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1. Scope

1.1 This specification² covers the determination of the attachment strength of bindings to alpine skis. This specification is applicable to alpine skis of the following nominal lengths (see Terminology F 472 for a definition of nominal length l_N):

Group 1:	$L_N \geq 1700$ mm
Group 2:	$1400 \text{ mm} \leq L_N < 1700$ mm
Group 3:	$1000 \text{ mm} \leq L_N < 1400$ mm
Group 4:	$750 \text{ mm} \leq L_N < 1000$ mm

1.2 The binding mounting area, a designated binding attachment area provided by the ski manufacturer in accordance with Specification F 473, shall be the only area of the ski subjected to this test and may be specially reinforced.

1.3 This specification covers skis in which bindings are attached by means of screws.

1.4 The specified tests check tendencies for screws to pull out, skis to delaminate, and screw hole threads to strip by using test screws that are loaded normal to the ski surface.

1.5 The following precautionary statement pertains only to the test method portion, Section 6, of this specification: *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 472 Terminology for Geometry of Alpine Skis³

F 473 Specification for Binding Mounting Area Dimensions on Alpine Skis³

F 475 Specification for Test Screw Used in Screw-Retention Test of Binding Mounting Area on Alpine Skis³

¹ This specification is under the jurisdiction of ASTM Committee F-27 on Snow Skiing and is the direct responsibility of Subcommittee F27.30 on Alpine and Cross Country Ski Dimensions and Characteristics.

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² This specification is meant to conform in all significant aspects to the specification for tests of static screw-retention strength of binding mounting area for alpine skis as set forth in ISO 8364.

³ *Annual Book of ASTM Standards*, Vol 15.07.

2.2 ISO Standards:

ISO 2632⁴

ISO 6506⁴

ISO 8364 Alpine Skis and Bindings—Binding Mounting Area—Requirements and Test Methods⁴

3. Significance and Use

3.1 This specification allows manufacturers of skis to provide for a specific screw-retention strength over a defined area on the ski. This specification allows manufacturers of bindings to provide retention of bindings by designing them to comply with these screw-retention levels.

4. Apparatus

4.1 Retention Strength:

4.1.1 A tensile testing machine is required, with a pullout device in accordance with Fig. 1, having a minimum load range of 10 000 N.

4.1.2 The pull-out device (see Fig. 1) shall consist of the following:

4.1.2.1 *Steel Attachment Plate (A)*, with two holes of 6-mm diameter. The steel hardness shall be 135 HB30.

4.1.2.2 *Universal Joint (B)*, which is connected to the attachment plate and to the clamping device of the test machine, and

4.1.2.3 *Ski Support (C)*, with two support rollers.

4.1.3 When using standard test screws in accordance with Section 5, the following penetration depths, d , shall be reached:

Groups 1 and 2:	$d = 8 \pm 0.5$ mm
Groups 3 and 4:	$d = 6 \pm 0.5$ mm

4.2 Stripping Resistance:

4.2.1 A jig is required for drilling holes, mounting test screws, and determining stripping torque (see Fig. 2). The jig, used with a drill bushing, facilitates precise drill holes and screw mounting perpendicular to the top surface of the ski.

4.2.2 The jig shall be equipped with a friction plate made of steel with hardness approximately 135 HB30 in accordance with ISO 2632, and surface roughness R_a of 0.8 μm in accordance with ISO 6506.

⁴ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10030.