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An American National Standard

Standard Test Method for Treestand Static Stability and Adherence[1]

This standard is issued under the fixed designation F 2125; 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.

~~ε[1] NOTE—Title was corrected editorially in June 2006.~~

1. Scope

1.1 This test method covers the determination of the static stability and adherence of treestands relative to the manufacturer's rated capacity.

~~1.2The values stated are in inch-pound units and are to be regarded as standard.~~

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *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. Terminology

2.1 The terminology and definitions in the referenced documents are applicable to this test method.

2.2 *Definitions:*

2.2.1 *backbar or V-bar*—adjustable component of a climbing treestand or handclimber that engages the tree to provide support. The backbar may be rigid or flexible.

2.2.2 *climbing stick*—device used to assist climbing a tree primarily to a fixed position treestand. A structure that is secured to the tree and allows the user to support his weight and climb to the desired height on the tree.

2.2.3 *climbing treestand*—treestand that provides both the means to ascend the tree, and allow the user to remain at a desired elevation.

2.2.4 *handclimber, or climbing aid*—device to assist climbing with a climbing treestand. A structure that allows the user to support his weight when lifting a climbing treestand with his legs.

2.2.5 *ladder treestand*—treestand that is secured to the tree at the elevation where the platform is located. (The ladder treestand may be secured to the tree at other locations and has steps that are used to reach the platform or hunting position.)

2.2.6 *non-climbing, fixed position or hang-on treestand*—treestand that is secured to the tree at the elevation where it is used. (The user usually ascends the tree by some means and then lifts the treestand to the desired position and secures it for use.)

2.2.7 *platform*—horizontal structural area of a treestand on which the user stands and/or places his feet.

2.2.8 *treestand*—device designed to be affixed to a tree or its branches so as to permit an individual to sit or stand thereon for the purpose of attaining an elevated position from which to observe, photograph or hunt.

2.2.9 *tripod or tower stand*—tripod or tower stand is constructed to be self-supporting and is not required to be secured to a tree.

3. Summary of Test Method

3.1 A climbing treestand is mounted so that its platform is perpendicular to a rigid wood or metal pole when the rated load is applied parallel to the mounting pole, at selected points. A fixed position or ladder stand shall be mounted with the platform perpendicular to the mounting pole. A tripod stand shall be positioned so that the platform is perpendicular to the application of the load. A climbing stick shall be mounted such that the steps are perpendicular to the pole. The platform is equipped with deflection measurement devices. The load is applied, in order, at the selected points and recordings are made of the deflection at each point unless the test subject moves from its initial position or until permanent deflection from the load occurs. During this test, the test subject will rotate, but shall not slip or have permanent deformation.

3.2 In addition, for climbing treestands, only the test given in 3.1 is duplicated, except that the treestand platform is not

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perpendicular to the mounting pole, but at an angle approximately 15°, such as that used in ascending or descending a tree.

4. Significance and Use

4.1 This test method is intended for quality assurance and production control purposes. This test method is not intended to be an independent material or product-acceptance test.

5. Apparatus

5.1 A rigid round wood or metal pole, preferably vertical, is used to mount the subject product such that pole deflection is minimized.

5.1.1 The mounting pole diameter shall be 10 ~~in. (254 mm)~~ ± 1 in. ~~(2.54~~(254 ± 25.4 mm).

5.2 The load shall be applied using either calibrated weights or a mechanical device in conjunction with a calibrated load cell.

5.2.1 The use of calibrated weights requires that weight placement be accurate to assure that the load application centroid is coincident with the boundaries defined and meets the requirements as given in 5.3.1 and in 5.4.3. Caution should be exercised for operator protection with the use of weights in case of slippage or premature failure.

5.2.2 The use of a mechanical device such as a tensile testing machine or hydraulic power, in combination with pulleys, fulcrums or bearings to re-direct forces, requires the use of a calibrated load cell attached adjacent to the test subject to account for friction losses.

5.3 Calibrated deflection measuring devices (such as dial indicators or optical laser) shall be used to measure movement of the test subject under load. The accuracy of the measuring devices shall be at within .010 in. (0.254 mm) and repeatable within .005 in. (0.127 mm). The devices shall measure movement parallel to the direction of the applied load and shall be mounted in such a manner to eliminate deflection of the test apparatus and be placed, as a minimum, as follows:

5.3.1 There shall be at least four platform deflection measurements taken when the load is applied.

5.3.1.1 One measurement on each side of the test subject, symmetrical about the test subject centerline and at points furthest from the mounting pole, that is, the outermost corners of the platform.

5.3.1.2 One measurement on each side of the test subject, symmetrical about the test subject centerline and at points closest to the mounting pole, but on the outermost sides of the platform, that is, the outermost edges closest to the mounting pole.

5.4 The application of the load shall be at the points as given in 5.3.1 on the platform area.

5.4.1 The load shall be applied, one at a time, to the points as given in 5.3.1.1, each side, and then as given in 5.3.1.2, each side.

5.4.2 The load shall be applied to the test subject over a 50 in.^{2} (0.032 m^2) area by means of a flat rectangular steel plate 5 in. (127 mm) wide by 10 in. (254 mm) long and a minimum of ½ in. (12.7 mm) thick. The edges of the load plate adjacent to the test subject shall be deburred with 0.015/0.030 in. (0.381/0.762 mm) radius to reduce damage to the test subject by sharp corners. A single layer of thin masking tape may be applied to the surface of the load plate contacting the test subject to reduce scratching and improve friction.

NOTE 1—Load attachment structure must be secured to this load plate therefore fabrication by welding must assure that the plate remain flat and free of distortion.

5.4.3 The load plate shall be positioned on the test subject with its long axis and its center as close to the point as given in 5.3.1 as possible, yet maintaining the 50 in.^{2} (0.032 m^2) contact area. The centerline of the load plate need not be parallel to the major axis (axis of symmetry) of the test subject.

5.5 Climbing stands are to be tested at approximately 15° below level, and above level, as per manufacturer's directions.

5.5.1 Apparatus shall be as given in 5.1 through 5.3.1.2.

5.5.2 The load shall be applied as given in 5.4.2 except that the load plate shall be 100 in.^{2} (0.065 m^2) by using a 10 in.^{2} (254 mm^2) by ½ in. (12.7 mm) thick plate.

6. Procedure

6.1 Read instructions accompanying the test subject to ascertain the proper procedure for use and mounting and secure the test subject to the mounting pole such that the platform (plane of the platform) is approximately perpendicular to the mounting pole when its rated load is applied. If necessary, use minimum auxiliary temporary means to maintain the subject in the correct position during set-up. (Frictional forces, without a load on the subject, may not be sufficient in some cases for the subject to remain in position. A small band on the mounting pole may be necessary).

6.2 By geometric means, determine the location of the load application points as given in 5.3.1 and 5.4.3 and mark accordingly.

6.3 Determine if the test subject will deflect sufficiently during the test to allow the load plate to slip or shift. If so, provide auxiliary means such as clamps or stops to eliminate sideways movement of the load plate. The load must be applied as given in 5.4 and must be continuously applied parallel to the mounting pole throughout the entire test.

6.4 Locate and mount deflection measurement devices, or reference points using optical laser, as given in 5.3.

6.5 The initial trial load for beginning the test, at the first test point only, shall be 80 % of the test subjects' rated capacity. For example, a test subject with a rated capacity of 300 ~~lbs~~lb (661.4 kg) shall begin the test at a trial load of 240 ~~lbs~~lb (529.1 kg).

6.5.1 The trial load shall be applied to one of the two points as given in 5.3.1.1. Place the load plate centerline coincident with the mark as given in 5.4.3. With the initial trial (80 %) load, verify that the test subject does not move (shift) from its initial static