This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.



Standard Specifications for Personal Climbing Equipment¹

This standard is issued under the fixed designation F887; 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.

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¹ This standard is under the jurisdiction of ASTM Committee F18 on Electrical Protective Equipment for Workers and are the direct responsibility of Subcommittee F18.15 on Worker Personal Equipment.

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1.2.5 Fall Restriction-to prevent or limit free fall from a work position or while ascending/descending a wood pole.

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1.3 Three types of climbers, (Types A, B, and C) and two types of climber straps, Types (A and B) are covered.

1.4 Two types of body belts, (Types A and B) are covered.

*A Summary of Changes section appears at the end of this standard

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1.5 Eight types of work positioning devices: three positioning straps, (Types A, B, and C), three adjustable-positioning lanyards, (Types A, B and C) and two nonadjustable positioning lanyards, (Types A and B) are covered.

1.6 Two types of WPFRD, (Types A and AB) are covered.

1.7 Arborist saddle, (Type A) Work Positioning and Suspension are covered.

1.8 Two types of harnesses, (Types A and B) are covered.

1.9 Two types of energy absorbing lanyards, (Types A and B) are covered.

1.10 The values stated in United States customary 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.

1.11 The following safety hazards caveat pertains only to the test method portions, 9.2, 10.3, 11.2, 14.1.4, 15.3, 15.4, 16.2, 17.2, 18.4, 21.2, 22, 23, and 25 of this standard: *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.

1.12 This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 ASTM Standards:²

F819 Terminology Relating to Electrical Protective Equipment for Workers

- F1959/F1959M Test Method for Determining the Arc Rating of Materials for Clothing
- 2.2 ANSI Standard:³

ANSI 05.1 Wood Poles – Specification and Dimensions

2.3 ANSI/ASSE/ASSP Standards:⁴

- Z359.0-2018 Definitions and Nomenclature Used for Fall Protection and Fall Arrest
- Z359.3-2019 Safety Requirements for Lanyards and Positioning Lanyards

Z359.11-2014 Safety Requirements for Full Body Harnesses Z359.12-2019 Connecting Components for Personal Fall Arrest Systems

Z359.13-2013 Personal Energy Absorbers and Energy Absorbing Lanyards

Z359.14-2014 Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems

2.4 CSA Standard:⁵

CAN/CSA 015 Wood Utility Poles and Reinforcing Stubs

3. Terminology

3.1 Definitions:

3.1.1 *adjustable positioning lanyard (APL), n*—a component of a work positioning or fall restriction system (may be used for applications such as transitioning past an obstruction during ascent or descent).

3.1.2 *afterflame*, *n*—persistent flaming of a material after the ignition source has been removed.

3.1.2.1 *Discussion—In arc testing*, a visible flaming on or near a test specimen which persists after the arc exposure has ended. The afterflame ceases when flaming is no longer visible.

3.1.3 *afterflame time, n*—Refer to Terminology F819 for definition.

3.1.3.1 *Discussion—In arc testing*, the length of time, in seconds, for which a specimen continues to exhibit a visible flaming as determined by a time display video recording of the specimen during arc testing.

3.1.4 *arborist saddle*, *n*—an arrangement of straps, fittings and buckles or other elements in the form of a waist belt with a low attachment suitably arranged to support the body in a sitting position. The saddle may or may not include individual leg straps or a rigid batten seat section.

3.1.5 arc gap, n—Refer to Terminology F819 for definition.

3.1.6 *attachment element, n*—part or parts of an assembly intended for the load bearing connection of other components.

3.1.7 *attachment point, n*—specific connecting point on an assembly for load bearing connection to other components, consisting of one or more attachment elements.

3.1.8 *auxiliary positioning belt, n*—a modular device made up of straps, pads, buckles, and attachment points for fastening to a waist body belt.

3.1.8.1 *Discussion*—An auxiliary positioning belt is used for attachment to a two ring body belt and intended for work positioning or fall restriction while transitioning past obstructions during an ascent or descent and for support for a two ring body belt.

3.1.9 *billet*, n—the free (buckle hole) end of a belt or strap as opposed to the buckle end, which is designed to pass through the buckle for closing.

3.1.10 *body belt (two or four dee), n*—an element of a work positioning system with two or four connection points consisting of straps, pads, buckles, and rings that allow a user to work freely with both hands (see Fig. 1).

3.1.10.1 *Discussion*—The width of the back section of a body belt is directly related to and can vary dependent on the number of dee rings that will be accommodated, for example, two dee rings, four dee rings, or more.

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 (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

⁴ Available from the American National Standards Institute, ANSI, 25 W. 43rd St., 4th Floor, New York, NY 10036.

⁵ Available from Canadian Standards Association (CSA), 178 Rexdale Blvd., Toronto, ON M9W 1R3, Canada, http://www.csagroup.org.



FIG. 1 Dee Ring Configurations for 4 Dee Body Belts

3.1.11 *body belt attachment*, n—a system of straps and buckles which allow the harness wearer to use a body belt in conjunction with the harness.

3.1.12 *climber*, *n*—device used to assist in ascending and descending wood poles or trees. Climbers generally consist of leg iron, gaff, sleeves, straps, and pads.

3.1.13 *dee-ring*, *D-ring*, *n*—an element which allows for attaching a connecting device such as a carabiner or snaphook.

3.1.14 design test, n—for F887 applicable fall protection equipment, a test conducted on a sample or group of samples to represent how the design of product will perform during use. Design tests are used to qualify new products or revisions to existing product to this standard and are not required for each production batch as long as the design remains unchanged with respect to strength, function or performance.

3.1.15 *distorted*, v—Refer to Terminology F819 for definition.

3.1.16 *dripping*, *n*—as related to the burning of a textile, liquefied material that separates and falls from a textile.

3.1.16.1 Discussion—in electric arc testing of fall protection equipment or devices, a material response evidenced by flowing of the fiber polymer, the fabric, or the fabric coating, and the evidence of droplets from the material, that characterizes overall performance relative to reducing the transfer of heat that is sufficient to cause a second-degree burn.

3.1.17 electric arc ignition, n—as related to electric arc exposure, a response that causes the ignition of the material which is accompanied by heat and light, and then subsequent burning (see 22.6.1).

3.1.18 *electrode*, *n*—Refer to Terminology F819 for definition.

3.1.19 *element*, *n*—an integral part of a constituent, component, hybrid component, sub-system or system. (Webbing, attachments and fittings are examples of elements.)

3.1.20 *energy absorbing lanyard, n*—a lanyard containing a component whose primary function is to dissipate energy and limit deceleration forces which the system imposes on the body during fall arrest.

3.1.21 *fall arrest, n*—the action or event of stopping a free fall or the instant where the downward free fall has been stopped. (See ANSI/ASSP Z359.0-2018.)

3.1.22 *fall restraint*, *n*—a fall protection system which prevents the user from falling any distance.

3.1.22.1 *Discussion*—Fall restraint systems prevent the user from falling any distance while performing work tasks on a horizontal surface.

3.1.23 *fall restriction*, *n*—the act of preventing or limiting free fall from a work position, or while ascending or descending a wood pole.

3.1.24 *fastening and adjusting element, n*—devices that enable an assembly to be fastened and allow adjustment to be made to meet sizing requirements of the user.

3.1.25 *full body harness, n*—a component with a design of straps which is fastened about the person in a manner so as to contain the torso and distribute the fall arrest forces over at least the upper thighs, pelvis, chest, and shoulders with means for attaching it to other components or sub-systems.

3.1.26 gaff, n—a component of a pole or tree climber attached to the climber shank, similar to a spur, which is shaped to permit the secure penetration of the pole or tree trunk.

3.1.27 gate/keeper, n—a component of the snaphook/ carabiner, that locks the snaphook/carabiner in a closed position by a spring and a separate locking mechanism (see Fig. 2).

3.1.27.1 *Discussion*—The gate/keeper is the closing mechanism on the open end of the snaphook/carabiner which prevents the snaphook/carabiner from inadvertently opening up during use in an elevated workplace.

3.1.28 *hardware*, *connectors*, *n*—attaching components used to couple components of a fall protection system together.

3.1.28.1 *Discussion*—Hardware, connectors may be independent components of a system or may be integral elements of a component, hybrid component, subsystem or system used for fall protection.

3.1.29 *leg iron, n*—a component of a pole or tree climber. The base or frame of the climber consisting of a shank and stirrup section. (see Fig. 3 for illustration of a leg iron with attached gaff and sleeve).

3.1.30 *length adjusting device (LAD), n*—a device that provides the means to adjust the effective length of a lanyard.

3.1.31 *locking mechanism, n*—a component of the snaphook used in conjunction with the gate/keeper to retain the gate/



FIG. 3 Critical Stress Area of the Climber

keeper in a closed position until intentionally released and opened. A snaphook thus equipped, becomes a "locking snaphook."

3.1.32 *locking snaphook, n*—a snaphook with a locking mechanism (see 3.1.31).

3.1.33 *melting*, *n*—the liquefaction of material under the influence of heat.

3.1.34 *nose*, *n*—the end of the snaphook which the gate/ keeper rests on. It overlaps the gate/keeper latch in such a manner as to prevent the dee-ring from inadvertently releasing the snaphook (see Fig. 2).

3.1.35 part (body belt), load-bearing, n—a part of the body belt or work positioning strap that, when in use with both

snaphook/carabiner of the work positioning strap engaged in one dee-ring of the body belt, will be required to support all or part of the mass of the user. This includes all the material in the work positioning strap, and, in the case of the body belt, the material to which the dee-rings are directly fastened, and the material of the buckle strap that passes across the wearer's abdomen.

3.1.35.1 *Discussion*—This definition and the strength requirements described in 15.3.2 are designed to ensure that the buckle strap is strong enough to withstand certain emergency conditions, but are not to be construed as approval of attaching both snaphooks to the same dee-ring when working aloft. OSHA Subpart M (1926.502) prohibits working with two