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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.

1. Scope*

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

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1.1 This standard covers the specifications and qualification testing of the following:

- Climbers,
- Climber straps,
- Climber Pads,
- Climber Footplates,
- Body Belts,
- Work Positioning Devices with Locking Snaphooks/Carabiners,
- Wood Pole Fall Restriction Devices (WPFRD),
- Arborist Saddle,
- Harnesses,
- Energy Absorbing Lanyards.

These devices are used by workers in the climbing of poles, trees, towers, and other structures. Minimum performance criteria for ~~arc-resistance of harnesses and energy absorbing lanyards~~ in arresting a fall after exposure to electric arcs are included for workers who may be exposed to thermal hazards of momentary electric arcs or flame.

1.2 Equipment may fall within one of the following categories:

- 1.2.1 *Fall (Travel) Restraint*—Prevents a user from ~~being exposed to a fall hazard~~ reaching a fall hazard (allow 0 fall distance).
- 1.2.2 *Work Positioning*—Allows a 2 ft maximum free fall distance.
- 1.2.3 *Fall Arrest*—Allows a 6 ft maximum free fall distance with a maximum arrest force of 1800 lb.

NOTE 1—Under certain conditions and with the use of equipment designed for such conditions, a 12-ft free-fall distance with a maximum arrest force of 1800 lb is allowed.

1.2.4 *Suspension*—Allows 0 free-fall distance while supporting the user’s weight.

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

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.

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

F1891/F819 ~~Specification for Arc and Flame Resistant Rainwear~~ 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 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>.

2.3 *ANSI/ASSE Standard: ANSI/ASSE/ASSP Standards:*⁴

[Z359.0-2012/Z359.0-2018](#) Definitions and Nomenclature Used for Fall Protection and Fall Arrest

[Z359.3-2017/Z359.3-2019](#) Safety Requirements for Lanyards and Positioning Lanyards

[Z359.11-2014](#) Safety Requirements for Full Body Harnesses

[Z359.12-2009/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 of Terms Specific to This Standard: 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.

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.

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>.

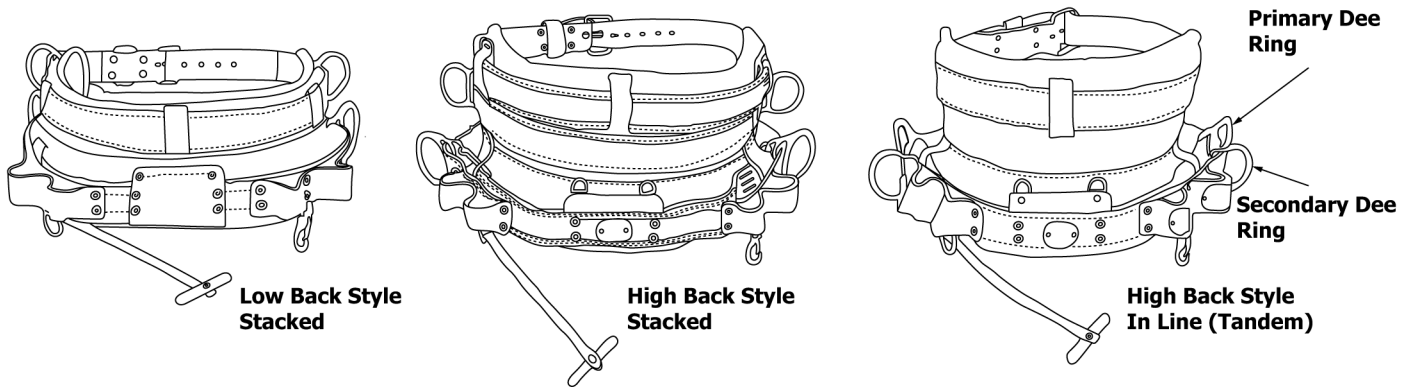


FIG. 1 Dee Ring Configurations for 4 Dee Body Belts

3.1.12 *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-unchanged with respect to strength, function or performance.

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

3.1.16 *dripping, n*—~~in electric arc testing, as related to the burning of a textile, 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.~~ 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 for (see 22.6.1 at least 5 s, or consumption of at least 25% of the exposed test specimen area:).~~

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 ANS/ASSE Z359.0-2012.) 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.