

**WAC 296-880-40020 Personal fall arrest system requirements.**

Personal fall arrest systems and their use must conform to the following provisions:

(1) Personal fall arrest systems:

(a) A full body harness must be used.

(b) The attachment point of the full body harness must be located in the center of the wearer's back near shoulder level, or above the wearer's head.

(c) Lanyards must have a minimum breaking strength of five thousand pounds (22.2 kN).

(d) The employer must protect all safety lines and lanyards against being cut or abraded.

(e) D-rings and snap hooks must be proof-tested to a minimum tensile load of thirty-six hundred pounds (16 kN) without cracking, breaking, or taking permanent deformation.

(f) Snap hooks must be a locking type snap hook designed and used to prevent disengagement of the snap hook by the contact of the snap hook keeper by the connected member.

(g) Unless the snap hook is designed for the following connections, snap hooks must not be engaged:

(i) Directly to the webbing, rope, or wire rope;

(ii) To each other;

(iii) To a D-ring to which another snap hook or other connector is attached;

(iv) To a horizontal lifeline; or

(v) To any object which is incompatibly shaped or dimensioned in relation to the snap hook such that unintentional disengagement could occur by the connected object being able to depress the snap hook keeper and release itself.

(h) Hardware must be drop forged, pressed or formed steel, or made of materials equivalent in strength.

(i) Hardware must have a corrosion resistant finish, and all surfaces and edges must be smooth to prevent damage to the attached full body harness or lanyard.

(j) All components of full body harness systems whose strength is not otherwise specified in this section must be capable of supporting a minimum fall impact load of five thousand pounds (22.2 kN) applied at the lanyard point of connection.

(k) Vertical lifelines (droplines) must have a minimum breaking strength of five thousand pounds (22.2 kN), except that self-retracting lifelines and lanyards which automatically limit free fall distance to two feet (.61 m) or less must have a minimum breaking strength of three thousand pounds (13.3 kN).

(l) When vertical lifelines (droplines) are used, not more than one employee must be attached to any one lifeline.

(m) Horizontal lifelines must be designed, installed, and used, under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.

(2) (a) Anchorages for full body harness systems.

(b) Anchorages for full body harness systems must be capable of supporting (per employee):

(i) Three thousand pounds when used in conjunction with:

(A) A self-retracting lifeline that limits the maximum free fall distances to two feet or less; or

(B) A shock absorbing lanyard that restricts the forces on the body to nine hundred pounds or less.

- (ii) Five thousand pounds for all other personal fall arrest system applications, or they must be designed, installed, and used:
  - (A) As part of a complete personal fall arrest system which maintains a safety factor of at least two; and
  - (B) Under the supervision of a qualified person.

**Note:** The system strength requirements in this section are based on a total combined weight of employee and tools of no more than three hundred ten pounds. If combined weight is more than three hundred ten pounds, appropriate allowances must be made or the system will not be in compliance. For more information on system testing, see WAC 296-880-510 Appendix C.

- (3) When stopping a fall, personal fall arrest systems must:
  - (a) Be rigged to allow a maximum free fall distance of six feet nor allow an employee to contact any lower level. A free fall may be more than six feet provided the employer can demonstrate the manufacturer designed the system to allow a free fall of more than six feet and the system has been tested to ensure a maximum arresting force of eighteen hundred pounds is not exceeded;
  - (b) Limit maximum arresting force on an employee to eighteen hundred pounds (8 kN);
  - (c) Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to three and one-half feet (1.08 m); and
  - (d) Have sufficient strength to withstand twice the potential impact energy of an employee free falling a maximum distance of six feet (1.8 m).

**Note:** Shock absorbers that meet the requirements of ANSI Z359.1 that are used as a part of a personal fall arrest system in accordance with manufacturer's recommendations and instructions for use and installation will limit the maximum arresting forces on an employee's body to eighteen hundred pounds or less.

To calculate fall clearance distance using a shock absorbing lanyard and D-ring anchorage connector, see WAC 296-880-505 Appendix B.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, and chapter 49.17 RCW. WSR 20-12-091, § 296-880-40020, filed 6/2/20, effective 10/1/20.]