

WAC 296-155-24613 Fall arrest specifications. Fall arrest protection must conform to the following provisions:

(1) Personal fall arrest system must meet the following requirements:

(a) You must use a full body harness.

(b) You must immediately remove from service full body harness systems or components subject to impact loading and you must not use them again for employee protection unless inspected and determined by a competent person to be undamaged and suitable for reuse.

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

(i) 3,000 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 900 pounds or less.

(ii) 5,000 pounds for all other personal fall arrest system applications, or they must be designed, installed, and used:

(A) As a 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.

(d) When stopping a fall, personal fall arrest systems must:

(i) Be rigged to allow a maximum free fall distance of 6 feet so an employee will not contact any lower level;

(ii) Limit maximum arresting force on an employee to 1,800 pounds (8 kN);

(iii) Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3 1/2 feet (1.07 m); and

(iv) Have sufficient strength to withstand twice the potential impact energy of an employee free falling a maximum distance of 6 feet (1.8 m).

Notes:

- Shock absorbers that meet the requirements of ANSI Z359.1-2007 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 1,800 pounds or less.
- To calculate fall clearance distance using a shock absorbing lanyard and D-ring anchorage connector, see WAC 296-155-24624, Appendix B.

(e) You must protect all safety lines and lanyards against being cut or abraded.

(f) 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.

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

(h) 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.

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

Note:

The system strength needs in the following items are based on a total combined weight of employee and tools of no more than 310 pounds. If combined weight is more than 310 pounds, appropriate allowances must be made or the system will not be in compliance. For more information on system testing see WAC 296-24-88050, Appendix C, Part II.

(j) Vertical lifelines (droplines) must have a minimum breaking strength of 5,000 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 3,000 pounds (13.3 kN).

(k) 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.

(l) Droplines or lifelines used on rock scaling operations, or in areas where the lifeline may be subjected to cutting or abrasion, must be a minimum of 7/8 inch wire core manila rope or equivalent. For all other lifeline applications, a minimum of 3/4 inch manila rope or equivalent, with a minimum breaking strength of 5,000 pounds, must be used.

(m) Lanyards must have a minimum breaking strength of 5,000 pounds (22.2 kN).

(n) All components of full body harness systems whose strength is not otherwise specified in this subsection must be capable of supporting a minimum fall impact load of 5,000 pounds (22.2 kN) applied at the lanyard point of connection.

(o) D-rings and snap hooks must be proof-tested to a minimum tensile load of 3,600 pounds (16 kN) without cracking, breaking, or taking permanent deformation.

(p) 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.

(q) 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.

(2) **Safety net systems.** Safety net systems and their use must comply with the following provisions:

(a) Safety nets must be installed as close as practicable under the surface on which employees are working, but in no case more than 30 feet (9.1 m) below such level unless specifically approved in writing by the manufacturer. The potential fall area to the net must be unobstructed.

(b) Safety nets must extend outward from the outermost projection of the work surface as follows:

Vertical distance from working levels to horizontal plane of net	Minimum required horizontal distance of outer edge of net from the edge of the working surface
Up to 5 feet	8 feet
More than 5 feet up to 10 feet	10 feet
More than 10 feet	13 feet

(c) You must install safety nets with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force equal to the drop test specified in (d) of this subsection.

(d) Safety nets and their installations must be capable of absorbing an impact force equal to that produced by the drop test.

(i) Except as provided in (d)(ii) of this subsection, safety nets and safety net installations must be drop-tested at the job site after initial installation and before being used as a fall protection system, whenever relocated, after major repair, and at 6-month intervals if left in one place. The drop-test must consist of a 400 pound (180 kg) bag of sand $30 \pm$ two inches (76 ± 5 cm) in diameter dropped into the net from the highest walking/working surface at which employees are exposed to fall hazards, but not from less than 42 inches (1.1 m) above that level.

(ii) When the employer can demonstrate that it is unreasonable to perform the drop-test required by (d)(i) of this subsection, you (or a designated competent person) must certify that the net and net installation is in compliance with (c) and (d)(i) of this subsection by preparing a certification record prior to the net being used as a fall protection system. The certification record must include an identification of the net and net installation for which the certification record is being prepared; the date that it was determined that the identified net and net installation were in compliance with (c) of this subsection and the signature of the person making the determination and certification. The most recent certification record for each net and net installation must be available at the job site for inspection.

(e) You must remove materials, scrap pieces, equipment, and tools which have fallen into the safety net as soon as possible from the net and at least before the next work shift.

(f) The maximum size of each safety net mesh opening must not exceed 36 square inches (230 cm^2) nor be longer than 6 inches (15 cm) on any side, and the opening, measured center-to-center of mesh ropes or webbing, must not be longer than 6 inches (15 cm). All mesh crossings must be secured to prevent enlargement of the mesh opening.

(g) Each safety net (or section of it) must have a border rope or webbing with a minimum breaking strength of 5,000 pounds (22.2 kN).

(h) Connections between safety net panels must be as strong as integral net components and must be spaced not more than 6 inches (15 cm) apart.

(3) Catch platforms.

(a) You must install a catch platform within 4 vertical feet of the work area.

(b) The catch platform's width must be a minimum of 45 inches wide and must be equipped with standard guardrails and toe boards on all open sides.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-24613, filed 4/19/16, effective 5/20/16. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060 and 29 C.F.R. 1926, Subpart M, Fall Protection. WSR 13-04-073, § 296-155-24613, filed 2/4/13, effective 4/1/13.]