

**WAC 296-24-23533 Crane and derrick suspended personnel (work) platforms.** (1) **Scope and application.** This standard applies to the design, construction, testing, use and maintenance of personnel platforms, and the hoisting of personnel platforms on the load lines of cranes or derricks.

(2) **Definitions.** For the purposes of this section, the following definitions apply:

**Failure.** Load refusal, breakage, or separation of components.

**Hoist (or hoisting).** All crane or derrick functions such as lowering, lifting, swinging, booming in and out or up and down, or suspending a personnel platform.

**Load refusal.** The point where the ultimate strength is exceeded.

**Maximum intended load.** The total load of all employees tools, materials, and other loads reasonably anticipated to be applied to a personnel platform or personnel platform component at any one time.

**Runway.** A firm, level surface designed, prepared, and designated as a path of travel for the weight and configuration of the crane being used to lift and travel with the crane suspended platform. An existing surface may be used as long as it meets these criteria.

(3) **General requirements.** The use of a crane or derrick to hoist employees on a personnel platform is prohibited, except when the erection, use, and dismantling of conventional means of reaching the worksite, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold, would be more hazardous, or is not possible because of structural design or worksite conditions.

(4) **Operational criteria.**

(a) You must perform hoisting of the personnel platform in a slow, controlled, cautious manner with no sudden movements of the crane or derrick, or the platform.

(b) You must ensure that load lines are capable of supporting, without failure, at least 7 times the maximum intended load, except that where rotation resistant rope is used, the lines must be capable of supporting without failure, at least 10 times the maximum intended load. The required design factor is achieved by taking the current safety factor of 3.5 and applying the 50% derating of the crane capacity.

(c) You must engage load and boom hoist drum brakes, swing brakes, and locking devices such as pawls or dogs when the occupied personnel platform is in a stationary working position.

(d) You must equip cranes and derricks with variable angle booms with a boom angle indicator, readily visible to the operator.

(e) You must equip cranes with telescoping booms with a device to indicate clearly to the operator, at all times, the boom's extended length, or you must make an accurate determination of the load radius to be used during the lift prior to hoisting personnel.

(f) You must use a positive acting device which prevents contact between the load block or overhaul ball and the boom tip (anti-two-blocking device), or you must use a system which deactivates the hoisting action before damage occurs in the event of a two-blocking situation (two block damage prevention feature).

(g) You must ensure that the load line hoist drum has a system or device on the power train, other than the load hoist brake, which regulates the lowering rate of speed of the hoist mechanism (controlled load lowering). Free fall is prohibited.

(h) You must ensure that the crane is uniformly level within 1% of level grade and located on firm footing. You must ensure that cranes equipped with outriggers have them all fully deployed following

manufacturer's specifications, insofar as applicable, when hoisting employees.

(i) You must ensure that the total weight of the loaded personnel platform and related rigging does not exceed 50% of the rated capacity for the radius and configuration of the crane or derrick.

(j) The use of machines having live booms (booms in which lowering is controlled by a brake without aid from other devices which slow the lowering speeds) is prohibited.

(k) Multiple-part line block: When a multiple-part line block is in use, you must use a substantial strap between the crane hook and common ring, shackle, or other equivalent device, to eliminate employee exposure to the lines running through the block, and to the block itself.

**(5) Rigging.**

(a) Lifting bridles on box-type platforms must consist of four legs of equal length, with one end securely shackled to each corner of the platform and the other end securely attached to a common ring, shackle, or other equivalent device to accommodate the crane hook, or a strap to the crane hook.

(b) You must secure shackle bolts used for rigging of personnel platforms against displacement.

(c) A substantial safety line must pass through the eye of each leg of the bridle adjacent to the common ring, shackle, or equivalent device and be securely fastened with a minimum amount of slack to the lift line above the headache ball or to the crane hook itself.

(d) All eyes in wire rope sling must be fabricated with thimbles.

(e) Wire rope, shackles, rings, master links, and other rigging hardware must be capable of supporting, without failure, at least 5 times the maximum intended load applied or transmitted to that component. Where rotation resistant wire rope is used for slings, they must be capable of supporting without failure at least 10 times the maximum intended load.

(f) Hooks on headache ball assemblies, lower load blocks, or other attachment assemblies must be of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut, and retaining pin must be used.

(g) You must only use bridles and associated rigging for attaching the personnel platform to the hoist line for the platform and the necessary employees, their tools and the materials necessary to do their work, and you must not use them for any other purpose when not hoisting personnel.

**(6) Personnel platforms - Design criteria.**

(a) The personnel platform and suspension system must be designed by a qualified engineer or a qualified person competent in structural design.

(b) The suspension system must be designed to minimize tipping of the platform due to movement of employees occupying the platform.

(c) The personnel platform itself, except the guardrail system and body belt/harness anchorages, must be capable of supporting, without failure, its own weight and at least 5 times the maximum intended load based on a minimum allowance of 500 pounds for the first person with light tools, and an additional 250 pounds for each additional person.

(d) The personnel platform must be conspicuously posted with a plate or other permanent marking which indicates the weight of the platform and its rated load capacity or maximum intended load.

**(7) Platform specifications.**

(a) You must equip each personnel platform with a guardrail system which meets the requirements of WAC 296-24-75011, and is enclosed at least from the toeboard to mid-rail with either solid construction or expanded metal having openings no greater than 1/2 inch (1.27 cm).

(b) You must install a grab rail inside the entire perimeter of the personnel platform.

(c) You must ensure that access gates, if installed, do not swing outward during hoisting.

(d) You must equip access gates, including sliding or folding gates, with a restraining device to prevent accidental opening.

(e) You must provide headroom which allows employees to stand upright in the platform.

(f) In addition to the use of hard hats, you must protect employees by overhead protection on the personnel platform when employees are exposed to falling objects.

(g) You must surface or smooth all rough edges exposed to contact by employees in order to prevent injury to employees from punctures or lacerations.

(h) You must ensure that all welding of the personnel platform and its components is performed by a qualified welder familiar with the weld grades, types, and material specified in the platform design.

(i) Occupants of all personnel platforms must wear a safety belt or harness and lanyard which meets the requirements of ANSI A10.14-1975.

(j) Box-type platform: The workers lanyard must be secured to the work platform or guardrail of the work platform.

(k) Rescue platform:

(i) If the platform is used as a rescue vehicle, the injured worker must be strapped into the stretcher or basket.

(ii) The basket must then be secured by lanyard to an anchorage within the platform.

(l) Boatswains chair: You must ensure that the workers lanyard is secured to the lift line above the headache ball or to the crane hook itself.

(m) Barrel-type platform:

(i) The workers lanyard must be secured to the lift line above the headache ball or to the crane hook itself.

(ii) A solid bar or rod must be substantially attached in a rigid position to the bottom or side of the platform.

(iii) The side bar or rod must extend a minimum of 8 feet above the floor of the work platform.

(iv) The bottom of the barrel-type platform must be of a convex shape to cause the platform to lay on its side when lowered to the ground or floor.

(v) Workers must enter and exit from barrel-type platforms only when they are in an upright position, stable, and securely attached to the load line.

(vi) The employer must use methods or devices which allow employees to safely enter or exit barrel-type platforms.

**(8) Personnel platform loading.**

(a) You must ensure that the personnel platform is not loaded in excess of its rated load capacity.

(b) You must ensure that the number of employees occupying the personnel platform does not exceed the number required for the work being performed.

(c) You must ensure that the personnel platforms are used only for employees, their tools, and the materials necessary to do their

work, and are not used to hoist only materials or tools when not hoisting personnel.

(d) You must secure materials and tools for use during a personnel lift to prevent displacement.

(e) You must evenly distribute materials and tools for use during a personnel lift within the confines of the platform while the platform is suspended.

**(9) Trial lift, inspection, and prooftesting.**

(a) You must make a trial lift with the unoccupied personnel platform loaded at least to the anticipated liftweight from ground level, or any other location where employees will enter the platform, to each location at which the personnel platform is to be hoisted and positioned. You must perform this trial lift immediately prior to placing personnel on the platform. The operator must determine that all systems, controls, and safety devices are activated and functioning properly; that no interferences exist; and that all configurations necessary to reach those work locations will allow the operator to remain under the 50% limit of the hoist's rated capacity. Materials and tools to be used during the actual lift can be loaded in the platform, as provided in subsection (8)(d) and (e) of this section for the trial lift. A single trial lift may be performed at one time for all locations that are to be reached from a single set-up position.

(b) You must repeat the trial lift prior to hoisting employees whenever the crane or derrick is moved and set up in a new location or returned to a previously used location. Additionally, you must repeat the trial lift when the lift route is changed unless the operator determines that the route change is not significant (i.e., the route change would not affect the safety of hoisted employees).

(c) After the trial lift, and just prior to hoisting personnel, you must hoist the platform a few inches and inspect it to ensure that it is secure and properly balanced. You must not hoist employees unless the following conditions are determined to exist:

(i) Hoist ropes must be free of kinks;

(ii) Multiple part lines must not be twisted around each other;

(iii) The primary attachment must be centered over the platform;

and

(iv) The hoisting system must be inspected if the load rope is slack to ensure all ropes are properly stored on drums and in sheaves.

(d) A competent person must conduct a visual inspection of the crane or derrick, rigging, personnel platform, and the crane or derrick base support or ground immediately after the trial lift to determine whether the testing has exposed any defect or produced any adverse effect upon any component or structure.

(e) You must correct any defects found during inspections which create a safety hazard before hoisting personnel.

(f) At each job site, prior to hoisting employees on the personnel platform, and after any repair or modification, you must prooftest the platform and rigging to 125% of the platform's rated capacity by holding it in a suspended position for 5 minutes with the test load evenly distributed on the platform (this may be done concurrently with the trial lift). After prooftesting, a competent person must inspect the platform and rigging. You must correct any deficiencies found and conduct another prooftest. You must not conduct personnel hoisting until the prooftesting requirements are satisfied.

(g) The employer must retain at the job site and produce when requested, documentation such as lift capacity information, verifying that the requirements of this standard have been met.

(10) **Work practices.**

(a) Employees must keep all parts of the body inside the platform during raising, lowering, and positioning. This provision does not apply to an occupant of the platform performing the duties of a signal person.

(b) Before employees exit or enter a hoisted personnel platform that is not landed, you must secure the platform to the structure where the work is to be performed, unless securing to the structure creates an unsafe situation.

(c) You must use tag lines unless their use creates an unsafe condition.

(d) The crane or derrick operator must remain at the controls at all times when the crane engine is running and the platform is occupied.

(e) You must promptly discontinue hoisting of employees upon indication of any dangerous weather conditions or other impending danger.

(f) Employees being hoisted must remain in continuous sight of and in direct communication with the operator or signal person. In those situations where direct visual contact with the operator is not possible, and the use of a signal person would create a greater hazard for that person, direct communication alone such as by radio may be used.

(g) Hand signals to the operator must be in accordance with those prescribed by the applicable ANSI standard for the type of crane or lift in use unless voice communication equipment is utilized. Signals must be discernable or audible at all times.

(h) Except over water, employees occupying the personnel platform must use a body belt/harness system with lanyard appropriately attached to the lower load block or overhaul ball, or to a structural member within the personnel platform capable of supporting a fall impact for employees using the anchorage.

(i) Lifts must not be made on another of the crane's or derrick's load lines while personnel are suspended on a platform.

(11) **Traveling.**

(a) Hoisting of employees while the crane is traveling is prohibited except for portal, tower and locomotive cranes, or where the employer demonstrates that there is no less hazardous way to perform the work.

(b) Under any circumstances where a crane would travel while hoisting personnel, the employer must implement the following procedures to safeguard employees:

(i) Crane travel must be restricted to a fixed track or runway;

(ii) Travel must be limited to the load radius of the boom used during the lift; and

(iii) The boom must be parallel to the direction of travel.

(c) You must perform a complete trial run to test the route of travel before employees are allowed to occupy the platform. This trial run can be performed at the same time as the trial lift required by subsection (9)(a) of this section which tests the route of the lift.

(d) If travel is done with a rubber tired-carrier, you must check the condition and air pressure of the tires. You must use the chart capacity for lifts on rubber for application of the 50% reduction of rated capacity. Notwithstanding subsection (4)(i) of this section, outriggers may be partially retracted as necessary for travel.

(12) **Preload meeting.**

(a) You must hold a meeting attended by the crane or derrick operator, signal person(s) (if necessary for the lift), employee(s) to be lifted, and the person responsible for the task to be performed to review the appropriate requirements of this section and the procedures to be followed.

(b) You must hold this meeting prior to the trial lift at each new location, and repeat it for any employees newly assigned to the operation.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. WSR 15-24-100, § 296-24-23533, filed 12/1/15, effective 1/5/16. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. WSR 00-08-078, § 296-24-23533, filed 4/4/00, effective 7/1/00. Statutory Authority: Chapter 49.17 RCW. WSR 96-09-030, § 296-24-23533, filed 4/10/96, effective 6/1/96; WSR 91-03-044 (Order 90-18), § 296-24-23533, filed 1/10/91, effective 2/12/91.]