

Standard/Regulation Information

OSHA Cranes and Derricks in Construction Fall Protection Related Sections

On November 8, 2010, OSHA published a new standard for cranes and derricks in construction. This new rule is a revision and an update to the old standard. The new standard, which is more stringent, addresses advances in the design of cranes and derricks, the qualifications of employees, the site conditions and the hazards nearby.

Who is affected by the new Standard?

The standard applies to power operated equipment used in construction for hoisting, lowering and horizontal movement of loads. Equipment includes articulating cranes, crawler cranes, cranes on barges, mobile cranes, boom truck cranes, cranes on monorails, tower cranes, overhead cranes and gantry cranes. Those cranes not covered include power shovels, backhoes, automotive wreckers, stacker cranes, power industrial trucks, drilling rigs, gin poles for erection of communication towers and tree trimming trucks.

Important Fall Protection Related Sections in the New Standard

There are two key sections in the new standard that relate to fall protection of employees and hoisting of personnel.

1926.1423 Fall Protection

- Personal fall arrest systems (PFAS) or fall restraint systems are typically required when working on cranes / derricks when there is an unprotected side or edge more than 6 feet above a lower level (or anything above 15 feet for assembly / disassembly work).
Note: Tower Cranes; for work other than erecting, climbing and dismantling, fall protection equipment must be provided and used for employees on walking/ working surface with an unprotected side or edge more than 6 feet above a lower level, (except when employee is near draw works, in cab or on deck). For erecting, climbing and dismantling work, fall protection is needed anytime above 15 feet.
- Fall arrest anchorage point criteria: typical fall arrest anchorages shall support at least 5,000 lbs. or provide at least a safety factor of 2 based on an engineered system.
- Anchorage criteria for positioning systems shall support at least twice the potential impact of an employee's fall or 3,000 lbs., whichever is greater.
- Fall restraint anchorage point criteria: anchor to any part of the equipment that is capable of withstanding twice the maximum load that an employee may impose on it during reasonably anticipated conditions of use.

- Anchor to load line – PFAS is permitted to be anchored to crane / derrick's hook or other part of load line where the following requirements are met: Reference 1926.1423 (j)
 - a) Qualified person has determined set up and capacity provides anchorage point of at least 5,000 lbs. or provides a safety factor of at least 2.
 - b) Equipment operator must be at work site and informed that equipment is being used for this purpose.
 - c) No load is suspended from load line when PFAS is anchored to it.
 - d) Training is provided as to this standard and Subpart M 1926.500 and .502.

1926.1431 Hoisting Personnel

- Use of equipment to hoist employees is prohibited except where other means (personnel hoist, ladder, stairs, aerial lifts, elevating work platform or scaffold) of reaching work area would be more hazardous or not possible. (This does not apply to steel erection).
- When using crane / derrick to hoist personnel, the employee must be in a personnel platform. The platform must meet several specific requirements within the standard, including having compliant guardrails and fall arrest anchor points, specific attachment / rigging methods and trial lift / inspection procedures.
Exception: Personnel platform or boatswain's chair can be used when hoisting into / out of drill shafts up to and including 8 feet in diameter, in pile driving and in some cases storage tank, shaft or chimney operations. Employee must use PFAS when being lifted in boatswain's chair. PFAS must be independent of crane / derrick for drill shaft and independent of lower load block or overhaul ball for pile driving and storage tank/ shaft / chimney operations. Boatswain's chair must be capable of supporting its own weight and at least 5 times the maximum intended load. No more than one person can be hoisted at a time.
- Fall Protection: personnel in platform must be provided with and use a fall arrest system. The system must be attached to a structural member within the personnel platform (except when over water). The anchor point in platform shall meet the 5,000 lbs. strength requirement or provide a safety factor of at least 2.

Major points of new OSHA standard:

Threshold is 6 feet for most operations on cranes and derricks.

It is acceptable to connect a fall arrest system to load line when qualified person is involved. Anchorage point for fall arrest system shall support 5,000 lbs. or provide at safety factor of at least 2.

Hoisting of personnel is allowed if no other means of access is available. Fall protection is required for a person being hoisted. Platforms (or boatswain's chairs in some applications) can be used to hoist people. Back up fall protection is required.

Effective date for new standard: November 8, 2010.

Summary: The new crane/ derrick standard requires fall protection for most operations. Using the load line as a fall arrest anchorage point as well as hoisting of personnel in platforms / boatswain's chairs is allowed as long as the specific requirements of the standard are met.