



Section 30: Steel Erection

1. Training

A qualified person is required to train exposed workers in fall protection and workers engaged in special, high risk activities. Inspection also requires a qualified person.

2. Hoisting and Rigging

- 2.1 Inspection of the worksite and equipment must be carried out at the beginning of each shift by a qualified person. A qualified rigger must also inspect the rigging prior to each shift.
- 2.2 For crane operations, safety latches on hooks may not be deactivated unless a qualified rigger determines it is safer to place purlins and joists without them, or equivalent protection is provided in a site-specific erection plan.
- 2.3 The standard allows employees engaged in initial steel erection or hooking/unhooking to work under loads in some specific instances. The load must be rigged by a qualified rigger.
- 2.4 Crane regulations prohibit the use of cranes to hoist personnel unless all provisions are met. When employees work under loads (allowed in specific instances), requirements in OSHA 29 CFR 1926.753(d) must be followed. Multiple lift rigging (with a maximum of 5 “Christmas Treeing” of steel members in one load) is permitted as long as the requirements of OSHA 29 CFR 1926.753(e) are met.
- 2.5 Crane operators are responsible for operations under their control and have the authority to stop and refuse to handle loads until safety has been assured.

3. Permanent Floors

Install permanent floors as soon as practical following the erection of structural members. Do not allow more than 2 floors (24 feet) of unfinished bolting or welding above the foundation or the uppermost secured floor.

4. Temporary Floors

- 4.1 Solidly plank the erection floor over its entire surface except for access openings. Use planking that is fully able to bear the loads, full size, undressed, laid tight, and secured against movement.
- 4.2 A guarding system must be installed and use the following:
 - A. A standard railing consists of a top rail, intermediate rail (midrail), toe board, 4-foot vertical debris nets, and posts.

- B. The top rail must be approximately 42 inches from the upper surface of the rail to the floor, platform, or ramp level. The top rail, if using wire rope, must be ½ inch wire rope with at least 3 J-type fist grip wire rope clamps at each connection, and turn buckles every 100 feet. Use thimbles where wire rope is connected.
- C. The midrail is located halfway between the top rail and the floor, runway, platform, or ramp. The midrail must be ½ inch wire rope with 3 J-type fist grip wire rope clamps at each connection and turn buckles every 100 feet. Use thimbles where wire rope is connected.
- D. The toe board must be at least 4 inches in height, securely fastened, and not have more than ¼ inch gap between it and the floor level where vertical debris nets cannot be installed.

5. Steel Work

- 5.1 When setting structural steel, secure each connection with at least 2 wrench-tightened bolts before the load is released.
- 5.2 Do not hoist material to a structure unless it is ready to be put in place and secured.
- 5.3 Comply with the fall protection requirement (see Section 17 – Personal Protective Equipment) for work performed over 6 feet. (One hundred percent fall protection is required for steel erection work.)
- 5.4 When loads are being hoisted, walking under the lift or permitting an employee to be exposed to the swing of the lift is prohibited.
- 5.5 Use a tag line to control loads.
- 5.6 Post barricades and “Danger Men Working Overhead” signs around the erection area.

6. Fall Protection

Deckers in a Controlled Decking Zone (CDZ), connectors, and all others engaged in steel erection must be protected at heights greater than 10 feet with fall protection. Connectors must wear fall arrest or restraint equipment and be able to be tied off or they must be provided with another means of fall protection that is compliant with regulations. Deckers may be protected by a CDZ.