Steel Erectors Go Miles High

*If the average steel erector works on a 20-story building twelve months a year, for a total of twenty-five years, then be the time he finishes his career he will have climbed steel well over twelve thousand (12,000) miles high. Probably even more. So, indeed steel erectors go **miles high**.*

What does OSHA have to say about steel erection, steel erection safety, and steel erection construction techniques? OSHA CFR 1926 750 (Subpart R – Steel Erection) Standards are divided into six major sections, as follows:

- Permanent Flooring
- Temporary Flooring
- Floor Periphery – Safety Railing
- Flooring – Other Construction
- Structural Steel Assembly
- Bolting/Riveting/Fitting-Up/Plumbing-Up

The bulk of this OSHA Standard outlines the safe manner in which steel erection shall proceed, from ground level, to the topping-out. It provides a great number of variances, including distances, thicknesses, tolerances, using of nets where temporary flooring is not adaptable, alternate usage of planking versus steel planking, etc.

Since each floor of steel erection has a "leading edge" hazard, it stipulates that a steel safety railing, consisting of usage of ½" wire rope, shall be installed approximately 42 inches high (around the entire periphery of all temporary-planked or temporary-metal decked floors of tier buildings, and other multi-floored structures during structural assembly).

Coupled with OSHA's Fall-Protection Standard, however, a mid-rail at the 21" height would also have to be installed, along with a toe-board at the base. Since wire rope is often times indistinguishable from a distance (against the skyline), yellow tape must be tied to the top-rail to warn workers that there is a fall hazard present.

Here are other safety directed topics contained in the Steel Erection Standard:

Air Line Hose Sections
Containers for Storing
Eye Protection
Field-Bolting
Fitting-Up
Floor Openings
Hoisting Line
Impact Wrenches
Lateral Stability
Metal Decking (Strength)
Open Web Steel Joists
Plumbing-Up
Pneumatic Hand Tools
Pneumatic Riveting Hammer
Riveting
Safety Nets
Structural Assembly
Tag Lines
Turnbuckles
Wood Planking (Thickness)

Although not detailed in the Steel Erection Standard, fall-protection gear is specifically required (as outlined in OSHA's Fall Protection Standard), so training/outfitting/enforcement of this **Standard** is a key part of any steel erection procedure.

Full Body Harness – Since all steelworking procedures take place at heights where falls could be fatal, wearing and proper use of full-body harnesses is mandatory for most steel erector personnel.

Harnesses must be "sized" depending on the size and body weight of the worker. Body harnesses come in various sizes (small, medium, large, and universal). Workers must be checked out in the proper wearing of the body harnesses, and must also be trained in the proper storage and maintenance of body-harness pieces (harness, hardware, lanyards, double-locking snaphooks, safety lines, anchorage, fall distance, etc.).

Ladders – When accessing any height four-feet or more, ladders must be used. Ladders must be tied off (at both the bottom and the top), and shall be erected at a 4:1 ratio (extend from the base one foot for each four feet of height being accessed). Ladders must have no defects, and should be guard-railed or cordoned off is for lifts and other mechanized equipment is adjacent to the ladders themselves.

Crane Operation – Since one or more cranes are involved in almost every steel erection process, the safety issues regarding use and operation of cranes is outlined in OSHA's CFR 1926.550 (Cranes, Derricks, Hoists, Elevators, and Conveyors Standard.

Topics covered in the Crane Standard are highlighted as follows:

Annual Crane Inspection
Belts/Gears/Shafts/Pulleys
Bird Caging
Booms
Center of Gravity
Competent Safety Person
Fire Extinguishers
Fire Watch
Fuel Handling/Storage
Generators
Ground Jumper Cables
Guy Lines
Hand Signals
Hoisting Triangle
Housekeeping (Crane)
Housekeeping (Site)
Load Charts
Outriggers
Overhead Power Lines
Personal Protective Equipment
Pre-Lift Meetings
Rated Load Capacities
Rigging
Storage
Swing Radius
Traveling
Trial Lift
Welding
Wire Rope
Wire Rope ANSI Standards

Safety is paramount to all facets of steel erection. Safety, for steel erection and steel erectors, has a zero tolerance. The day starts and finishes with safety. No exceptions, no deviance's, no short cuts. BE SAFE ALWAYS!