

Falls are a leading cause of worker fatalities in the U.S. Construction industry. In 2006, there were over 400 workers killed and more than 100,000 injured as a result of falls at construction sites.

OSHA requires construction employers to protect their employees from falling objects as well as falling off, onto, or through working levels whenever as affected employee is 6 feet or more above a lower level. Protection also must be provided for construction workers who are exposed to the hazard of falling into dangerous equipment.



Each employee at the edge of an excavation 6 feet or more shall be protected from falling by guardrail systems, fences,

barricades, or covers. Walkways to cross over excavations require guardrails if the fall would be 6 feet or more to the lower level.

The rule covers most construction workers, however, workers on scaffolds, ladders, and those engaged in steel erection of buildings are covered in other OSHA regulations.

When fall protection is required:

- Ramp, runways, and other walkways
- Excavations, hoist areas, and holes
- Formwork and reinforcing steel
- Leading edge work, and unprotected sides and edges
- Overhand bricklaying and precast concrete erection
- Roofing work, wall openings, and

residential construction

- Various other walking/working surfaces

Types of fall protection:

- Covers
- Guardrail systems
- Safety net systems
- Personal fall arrest systems
- Positioning device systems
- Warning line systems
- Controlled access zones



Covers

Covers located in roadways and vehicular aisles must be able to support at least twice

the maximum axle load of the largest vehicle to which the cover might be subjected. All other covers must be able to support at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time. All covers must be secured and color-coded or bear the markings "HOLE" or "COVER".

Guardrail system

When a guardrail system is utilized to protect workers from falls, the system's components must meet specific criteria relative to spacing, placement, weight and force endurance, overhang, surfacing, and other structural factors. Affected components consist of toprails, midrails, screens, mesh, intermediate vertical members, solid panels, surfaces, and other equivalent structural members.

Safety Net Systems

When safety nets are used to protect workers from falls, OSHA requires they be installed as close as possible under the walking/working surface on which employees are working and never more than 30 feet below such levels. Other OSHA requirements pertain to inspections, connections, size, openings, placement, strength, and removal of debris.

Personal Fall Arrest Systems

These consist of an anchorage, connectors, and body harness and may include a deceleration device, lifeline, or suitable combinations. Personal fall arrest systems must meet specific requirements relative to maximum arresting force, free fall distance, maximum deceleration distance, strength, and component materials. They must be inspected prior to each use for wear damage, and other deterioration.



Positioning Device Systems

These body belt or body harness systems are to be set up so that a worker can free fall no farther than 2 feet. They shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater. Requirements for connectors must meet the same criteria as those for personal fall arrest systems.

Safety Monitoring Systems

When no other alternative fall protection has been implemented, the employer shall implement a safety monitoring system. Employers must appoint a person competent in the recognition of fall hazards to monitor the safety of workers. The competent person must be operating on the same walking/working surfaces of the workers and be close enough to work operations to see and communicate orally with them.

Warning Line System

Warning line systems consist of ropes, wires, chains, and supporting stanchions. OSHA

requirements pertain to rigging, flagging/marking, placement, spacing, strength, and support considerations.

Controlled Access Zones

A controlled access zone is a work area designated and clearly marked in which certain types of work (such as overhand bricklaying) may take place without the use of conventional fall protection Systems (guardrail, personal arrest or safety net) to protect the employees working in the zone. Controlled access zones are used to keep out workers other than those authorized to enter work areas from which the protective systems have been removed.

For more information see OSHA publication: Fall Protection in Construction



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