OSHA® FactSheet

Reducing Falls during Residential Construction: Erecting Exterior and Interior Walls

Every year, residential construction workers experience fatal injuries due to falls. Erecting walls presents several challenges when it comes to protecting workers from falls. This fact sheet highlights some of the hazards of erecting interior and exterior walls, and details some practical methods that employers can use to protect workers who erect walls. The fall protection methods in this fact sheet may not be suitable in all situations. Employers are responsible for ensuring compliance with applicable OSHA requirements.

Risks While Erecting Exterior and Interior Walls

Workers can be exposed to serious fall hazards while framing and erecting walls – particularly if the structure being built has multiple stories. Openings in walls (such as windows and doors) and floor openings present potential hazards, as workers can fall through them. The use of effective fall protection can prevent a serious fall.

The employer must provide a training program for each worker who might be exposed to fall hazards. The program must enable each worker to recognize fall hazards and each worker must be trained in the procedures to follow to minimize these hazards. For fall protection training requirements, refer to 29 CFR 1926.503. In all cases, employers must evaluate the hazards and take steps to reduce the risk of falls.

Reducing Risks:

Planning

Planning for the use of fall protection equipment can help employers protect workers from falls. Before beginning the job, identify fall protection needs. Once appropriate fall protection systems have been identified, have those systems in place before the workers report to the job.

Assembling Walls

Using pre-fabricated wall panels can reduce the amount of time workers are exposed to fall hazards while working at heights. Many employers build walls on site, however. Workers then use the installed floor of the structure as a work platform to frame the wall sections. In either case, employers must determine if fall protection is required and then implement procedures to protect workers. This requirement applies when erecting both interior (e.g., around stairwell openings) and exterior walls.

Lifting Walls into Place

Employers must protect workers from falling while they are raising walls. Once a wall segment is framed it can be lifted into place using a lifting device such as a forklift or wall jack. If a lifting device cannot be used at a particular worksite, steps can be taken to address the fall hazards, as well as the stress and strain hazards that can be present when workers raise walls by hand.

Using the Right Equipment

Employers generally must ensure that workers use fall protection meeting OSHA requirements whenever they work 6 feet or more above a lower level (29 CFR 1926.501(b)(13)). There are guardrail systems and personal fall arrest systems available that can provide workers the flexibility they need during wall construction. Employers also may choose to use scaffolds for wall erection work. (Note: OSHA's fall protection requirements for residential construction work performed on scaffolds are in Subpart L, not in 29 CFR 1926.501(b)(13)).

Guardrails

Guardrail systems can protect workers framing walls around the perimeter and at floor openings. Framed exterior walls typically include openings for windows and doors. Workers can apply sheathing to the frame, and install guardrails across window and door openings, before raising wall sections so that the openings are protected when the walls are set into place.

OSHA generally requires the top rail height to be 42 inches + 3 inches above the walking/working level. A midrail is also required between the top rail and the walking/working surface when there is no wall or parapet at least 21 inches high. For additional requirements for guardrails, refer to 29 CFR 1926.502(b).

During multi-story construction many employers provide fall protection by installing guardrails on exterior wall sections prior to erecting them into place. This ensures perimeter protection before workers begin activities on each additional floor.

Personal Fall Arrest System (PFAS)

A PFAS is a tool available to workers who are framing and erecting walls. In fact, a PFAS is the system of choice for many workers who work at heights. However, a malfunction in any component of a PFAS could be disastrous for a worker. Always follow the manufacturer's instructions on selecting, installing and using PFAS components correctly. Certain anchorage assemblies rotate or offer extension arms to improve mobility and prevent lifelines from contacting the floor surface.

Personal Fall Arrest System

A PFAS is designed to safely stop a fall before the worker strikes a lower level. The system includes three major components:

A. An ***anchorage*** to which the other components of the PFAS are rigged.

B. A full body ***harness*** worn by the worker.

C. A connector, such as a ***lanyard or lifeline***, linking the harness to the anchorage. A rip-stitch lanyard, or deceleration device, is typically a part of the system.

For more information on the requirements for a PFAS, refer to 29 CFR 1926.502(d).

Remember that workers must use full-body harnesses in fall arrest systems. Body belts can cause serious injury during a fall, and OSHA prohibits their use as part of fall arrest systems.

Attaching Anchors

OSHA requires that anchors for a PFAS either be able to hold at least 5,000 pounds per worker or maintain a safety factor of at least two (twice the impact load) and be used under the supervision of a qualified person. Always follow the manufacturer's instructions or consult a qualified person when installing anchors to ensure that they are strong enough to hold the sudden weight of a falling worker. There are anchorages available on the market that can meet OSHA's strength requirements if they are installed in accord with the manufacturer's instructions, with the right number of properly-sized nails or screws.

Fall Restraint

Fall restraint systems prevent falls by keeping the worker from reaching a fall hazard. While fall restraint systems are not mentioned in OSHA's fall protection rules, OSHA will accept a properly used fall restraint system in place of a personal fall arrest system when the restraint system is rigged so that the worker cannot get to the fall hazard. In effect, (if properly used) the system tethers a worker in a manner that will not allow a fall of any distance. A fall restraint system is comprised of a body belt or body harness, an anchorage, connectors, and other necessary equipment. Other components typically include a lanyard, and may also include a lifeline and other devices. Note: A self-retracting lanyard is not appropriate for a fall restraint system unless the worker cannot reach the fall hazard when the lanyard is fully extended.

Always follow the manufacturer's instructions or consult a qualified person to ensure proper installation of anchor points. OSHA recommends that fall restraint systems have the capacity to withstand 3,000 pounds of force or twice the maximum expected force that is needed to restrain the worker from exposure to the fall hazard. As a result, fall restraint may be a viable way to provide fall protection in situations in which the employer has concerns about the adequacy of available anchorage points for fall arrest equipment.

Scaffolds

When site conditions permit, employers can use scaffolds to provide a platform for workers erecting and securing walls. Scaffolds can be particularly useful for workers sheathing exterior walls in situations in which sheathing was not completed before the wall was set in place. Always follow the manufacturer's instructions or consult a qualified person to ensure that scaffold systems are used

safely. The employer must ensure that employees on scaffold systems 10 feet or more above a lower level are protected from falls. For other requirements for scaffolds, refer to 29 CFR 1926 Subpart L – Scaffolds.

Written Fall Protection Plans

When working at heights of 6 feet or greater, if the employer does not use ladders, scaffolds, aerial lifts or fall restraint systems and can demonstrate that it is not feasible or would create a greater hazard to use conventional fall protection equipment (guardrails, safety nets or a PFAS), the employer must develop a written site-specific fall protection plan in accord with 29 CFR 1926.502(k). The plan must be prepared by a qualified person. This person could be the owner, the supervisor, or any other worker who has extensive knowledge, training and experience with fall protection and is able to solve problems relating to fall protection.

The site-specific fall protection plan must document, for each location, why the use of conventional fall protection equipment is not feasible or will create a greater hazard. The plan must also describe the alternative methods that the employer will use so that workers are protected from falls. Workers and their supervisors must be trained on the proper use of those other fall protection methods.

OSHA Standard:

29 CFR 1926 Subpart M – Fall Protection
Available online at:
www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10922.

OSHA Residential Fall Protection Web Page:
www.osha.gov/doc/topics/residentialprotection/index.html.

OSHA Compliance Guidance:

Compliance Guidance for Residential Construction – STD 03-11-002 (dated 12/16/2010)
Available online at:
www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=DIRECTIVES&p_id=4755.

State Plan Guidance: Twenty-seven states or territories currently operate their own OSHA-approved state plans. State plan workplace health and safety standards must be at least as effective as comparable Federal OSHA standards. State plans have the option of promulgating more stringent standards and, therefore, may have additional requirements for residential construction. For more information on state plans and their requirements, please visit:
www.osha.gov/dcsp/osp/statestandards.html.

Help for Employers: OSHA's On-site Consultation Program offers free and confidential advice to small and medium-sized businesses in all states across the country, with priority given to high-hazard worksites. On-site consultation services are separate from enforcement and do not result in penalties or citations. Consultants from state agencies or universities work with employers to identify workplace hazards, provide advice on compliance with OSHA standards, and assist in establishing safety and health management programs. To locate the OSHA Consultation Program nearest you, call 1-800-321-OSHA (6742) or visit:
www.osha.gov/dcsp/smallbusiness/consult.html.

Almost every OSHA area office has a compliance assistance specialist to assist employers in complying with OSHA standards. To find the compliance assistance specialist nearest you, call 1-800-321-OSHA (6742) or visit:
www.osha.gov/html/RAmap.html.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.

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