
UPPER-LEVEL MANAGEMENT

LADDER & SCAFFOLD SAFETY

by James Stortzum

Safe use of ladders and scaffolds is not just a good idea—it's the law



The two guys working off the ladders are using a safe OSHA-approved set-up. The roofer, on the other hand, should have roof brackets and a safety line.

You're not doing your job as a manager if you haven't thought hard about equipment and safety when you're working on ladders and staging. Although productivity must be the first priority, spending time on a safe set-up isn't lost time. People work faster when they feel safer. And many ladder and scaffold attachments actually increase productivity.

Ladders

Ladders qualify as one of the most misused tools in the industry. Most contractors try to make an old ladder last longer than it should. Wood ladders are especially bad. If you have to patch one with tie wire and scab on a cross brace, get rid of it and invest in a new one. Find ladders well matched to the work you do.

Ladder Types. Different trades seem to favor different ladder types. Roofers typically use straight, or single, ladders made up of two parallel side rails connected by rungs. The rungs make the ladder easy to scamper up and down. Plus, the ladders are long—in lengths up to 30 feet.

The flat broad steps of stepladders make them more effective as work platforms for carpenters or painters. But the trestle ladder is even more versatile. Put two together and you have scaffold supports for interior finish work. An extension trestle ladder (sometimes called an A-frame) is a combination of a stepladder and a straight ladder, which reaches up to 26 feet high (see Figure 1). A true extension ladder costs a few bucks, but you'll need at least one to reach high gables (lengths up to 60 feet).

The first time I saw an articulating ladder, it reminded me of the "Vegematic" advertised on late night t.v.—it's supposed to do everything. Well, I bought one, but I find I don't use it as much as I do my extension ladder or stepladder. I can never remember how to arrange all the straight ladder sections to make the scaffold, stepladders, and sawhorses it shows on the label. It does store easily, but it's just a little heavier than I like, and the rungs don't feel solid beneath my feet.

Ladder industry ratings. When you're purchasing a ladder, look for the duty ratings. The ratings tell you whether it's a homeowner tool or a professional tool. Now that you've tossed out the old wood ladder, you should be looking to replace it with a Type I or Type IA ladder.

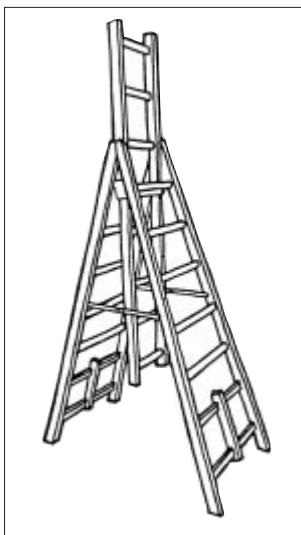


Figure 1. An extension trestle ladder is versatile and safe.

- Type III ladders are household ladders (light duty) rated to carry 200 pounds per rung. (that's one large mason with a trowel.)
 - Type II are commercial ladders (medium-duty) and will carry 225 pounds per rung. (Maybe one wiry electrician with a roll of Romex.)
 - Type I ladders are industrial ladders (heavy-duty), rated at 250 pounds per rung. (One muscular roofer with a roll of roofing felt.)
 - Type IA rated ladders are industrial ladders (extra-heavy-duty) that will hold 300 pounds per rung. (reserve this one for the human crane and two bundles of shingles.)
- Higher ratings generally mean thicker, stronger structural parts—and, of course, more money.

Ladder materials. Ladders are usually made of wood, aluminum or fiberglass. Carpenters typically prefer lightweight aluminum ladders for residential work. Aside from being heavy, wood ladders tend to crack and/or warp with age. But they're good for electricians who might get zapped by a conductive aluminum ladder.

Fiberglass ladders are strong, durable, and lightweight. Since they are non-conductive, they are the Cadillac of ladders for electricians and telephone-repair crews. Their main disadvantage is that they are expensive.

Ladder accessories. Ladder manufacturers sell lots of handy accessories. Unfortunately, each company makes just a few. You may have to look through several manufacturers' books to come up with the features you want. But accessories are well worth having because you almost never find the ideal ladder location.

Ladder jacks are heavy metal brackets that hook onto the rungs of a single or extension ladder. You can use ladder jacks to rig a quick scaffold, with a plank between ladders as the work platform. You can't span more than 8 feet between supports, use lumber less than 2 inches thick, or use planks less than 18 inches wide. Besides being unsafe, a platform narrower than 18 inches won't hold much equipment. OSHA regs also say you can't work any higher than 20 feet off the ground with this set-up, and you have to use Type IA (300 pound) or Type I (250 pound) ladders.

Single and extension ladders can be equipped with *stabilizers*, or stand-offs.

These metal brackets allow you to position yourself directly in front of a window (see Figure 2). In addition, you can use them to hold the ladder away from a wall, giving you access to gutters, fascia, or soffits. With tripod stability, you can use both hands to do your work.

We all know that a ladder must be placed on firm footing, but how often have you picked up scraps of 2x4, rocks, or hard dirt clods and tried to stuff them under one leg of the ladder? Manufacturers actually offer tools for

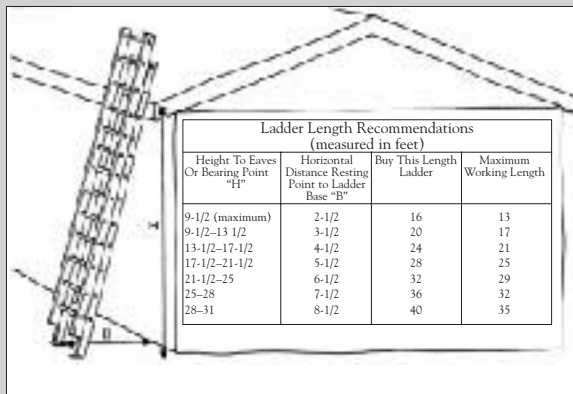
this, called *ladder levelers*, that work a lot better (see Figure 3).

There are other ladder accessories for those who want to be prepared for every situation. Shop selectively, and you can improve your productivity. Ladder hooks are metal brackets that support a ladder lying on a steep roof. Hook one end of the ladder over the ridge of the roof, and you can save a fragile slate or wood-shingle roof from damage. Pole grips hold ladder tops securely against any type of pole. (How often have you wished the top rung



Figure 2. Handy accessories like this ladder stand-off can make ladder work safer and easier.

Ladder Safety



Height To Eaves Or Bearing Point "H"	Horizontal Distance From Point To Ladder Base "B"	Buy This Length Ladder	Maximum Working Length
9-1/2 (maximum)	2-1/2	16	13
9-1/2-13 1/2	3-1/2	20	17
13-1/2-17 1/2	4-1/2	24	21
17-1/2-21 1/2	5-1/2	28	25
21-1/2-25	6-1/2	32	29
25-28	7-1/2	36	32
28-31	8-1/2	40	35

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Falls from ladders account for a substantial number of injuries and deaths on construction sites. To prevent injuries, ladder safety guidelines and common sense should be used. To comply with federal and state laws, OSHA standards must be adhered to.

Selection. Ladders must comply with the provisions of the ANSI ladder codes. Every ladder is marked according to its application. Read the label carefully. Select a ladder that is constructed to carry the weight of anyone using the ladder plus the weight of any tools and materials to be used while on the ladder. Select a ladder that is the proper length to do the job.

Inspection. Inspect ladders carefully before you use them. "Inspection of metal ladders shall include checking for corrosion of interiors of open end hollow rungs." Oil moving parts and tighten loose fasteners. Check the rope and pulley on an extension ladder for wear and breaking strength. Never use a damaged ladder and never make temporary repairs. Clean the ladder of all foreign material (mud, snow, wet paint, etc.). Do not paint a wood ladder. The paint can hide defects that may occur later. Use a clear finish.

Set-up. Get help when you set up a ladder. To erect a ladder, brace the bottom against a solid base so that it cannot slide. Raise the top end and walk toward the bottom end, grasping and raising the ladder rung by rung as you proceed. Place the ladder so that the distance from the wall to its base is one-fourth of the ladder's height (the proper working angle is 75.5 degrees). Extend the ladder only after it is in the vertical position

and only when you are standing on the ground. Set the base of the ladder on a firm level surface. Use leveling devices if necessary.

Do not place the ladder on unstable, loose, or slippery surfaces. Use non-slip safety shoes where necessary. Do not place ladders in front of unlocked doors or against movable objects, unless protected by barricades or guards. Secure the ladder so that it will not slip while in use. For stepladders, make sure the spreaders are locked and the ladder is stable before climbing. For extension ladders, make sure that there is sufficient lap between sections (see labels for guidelines) and that rung locks are engaged before climbing. The top of an extension or single ladder should extend 36 inches beyond its upper support surface. "Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds." (Read this last guideline again. We see it ignored all the time.)

Use. Always face the ladder when climbing or descending, and use both hands. Keep your body centered between the side rails. Do not overreach. Do not sit or stand above the second step of a step ladder. Never stand on the top three rungs of an extension ladder. Never extend a ladder while on it. Do not shift or "walk" a ladder while on it. Do not overload a ladder. Most of them are intended to support only one person. To avoid electric shock, do not use a metal or wet ladder near electric wires or equipment. Never use a ladder in a horizontal position.

Storage. Store ladders in a cool, dry, well ventilated space. To prevent sag, store straight or extension ladders horizontally on flat racks or hang them from supports at intervals of 6 feet.

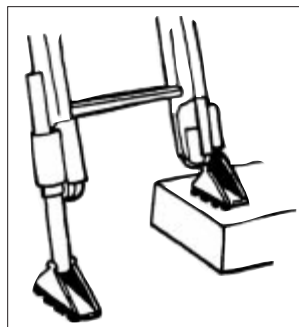


Figure 3. Ladder levelers work better than chunks of stone or scraps of wood. Some levelers work automatically.

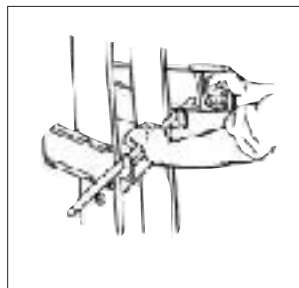


Figure 4. A ladder vise is handy for cutting conduit or plumbing pipe.

bent around a pole? This gadget does it.) And a *ladder lash* will secure the top of the ladder to poles and pipes.

And there's more. *Cable hooks* allow ladders to be safely erected against cables or ropes. (Don't try this with an aluminum ladder and a live electric line.) Hooks are great where you can't find a wall to lean against. Rig a rope between two trees, and you have a spot for the ladder. *Safety end caps* fit like little mittens over the tops of ladders. They are non-marring, slip-resistant, electrical insulators, and designed to help you position the ladder at a proper working angle. One manufacturer (Bauer) even makes a vise that can be attached to a ladder (see Figure 4). This handy item can hold pipe, conduit, and 2x4s, and it can be used as a wire caddy.

Scaffolds

Most contractors I know rent their scaffolds. Most of the rental stuff is pretty beaten up. So make sure they gave you all the parts and that they all work, before you set it up. Any time you're dealing with scaffolding, you're in OSHA territory.

Pipe scaffold. The most typical type of manufactured scaffolding is tubular welded-frame scaffolding, called pipe

scaffolding (see Figure 5). To prevent movement, OSHA requires that the scaffold be tied into the building at intervals not to exceed 30 feet horizontally and 26 feet vertically. You don't want a gust of wind blowing the scaffold over. This can happen. Recently in Brighton, England, a hurricane hit the fully scaffolded Brighton Pavilion. The scaffold jiggled loose a 10-foot concrete dome ornament and sent it plunging through the palace roof. So tie off that scaffold!

Medium-duty scaffolding is designed to support 50 pounds per square foot. It's usually 5-feet wide, can be stacked to heights over 100 feet, and is the most common scaffolding used in light construction.

Guardrails and midrails are used on scaffolds to keep workers from falling. Toeboards keep tools and materials from falling. Most manufacturers offer some kind of guardrail/toeboard system, which OSHA wants you to install on all open sides and ends of platforms more than 10 feet above the ground. The guardrail should be approximately 42 inches high and supported every 8 feet. Toeboards must be at least 4 inches high. Toeboards aren't to protect you. After all, if you drop your hammer, there's probably a helper who can lug it back up to you. But your helper might not watch to catch it on his head.

You may be saying right about now, "I've never seen a guardrail, a midrail, or a toeboard on any job I've worked on." Unfortunately, that's the case on much residential work. But, the rules still apply as long as you employ one or more workers (see "OSHA and You").

Okay, how about scaffolding planks? Usually a scaffold plank is either a plank that was pulled up from a wheelbarrow

lane, or a piece of gray, checked lumber rescued from the scrap pile. The scaffolding often has only one of these planks—or at most two.

Toeboards must be at least 4 inches high. Toeboards aren't to protect you. After all, if you drop your hammer, there's probably a helper who can lug it back up. But your helper might not watch to catch it on his head.

You won't be too surprised to find out that residential builders fall far short of OSHA requirements in the plank department, too. Did you know all scaffold work platforms should be fully planked from one side of the scaffold frame to the other? OSHA requires all planking to be "scaffold grade." In the past, builders used 2x10 rough-sawn scaffold-grade lumber. Due to liability problems, lumber companies don't advertise scaffold-grade lumber, but one of the lumberyards in your town should be able to order it, or you can order it direct from distributors (see addresses at end of article). And once you've got it, keep it dry and out of the weather. You can also use laminated-veneer lumber (LVL) because of its high strength characteristics.

Most scaffold manufacturers offer clip-on scaffold planks and various kinds of walk-boards, made of steel, aluminum, or aluminum frames with plywood decks.

They are manufactured in standard scaffold lengths and come in various widths so that two or three of them will fit inside the full width of the frame. These manufactured platforms also help make the scaffold tower more rigid.

Pipe scaffold accessories. Most rental yards can give you leveling screws to keep the scaffold plumb and level on uneven ground. They can be used with base plates for stationary scaffolds or with casters for rolling scaffolds.

Side-arm and end-arm brackets are used to extend the work surface away from the scaffold in toward the work. They are designed to support workers only and are available in sizes from 12 to 30 inches. If you have an odd-shaped building, you may want these. Outrigger brackets are used to extend the base of a scaffold to make it more stable. They come in handy on a windy day.

Pump jacks. Pump jacks are adjustable scaffolding devices that can be set up and operated by one person, and used for heights up to 30 feet. They're great for painting or soffit repairs because they're fast and easy to set up and take down. Also, they can span the same distance as many sections of scaffolding.

Pump jacks support a work platform, or planks, and move up or down 4x4 poles usually made of doubled 2x4s. You attach the 4x4 poles to the building with metal brackets at the top, bottom, and other points (at least every 10 feet vertically) as necessary. These brackets should be attached only to solid framing lumber—not to shingles and roof sheathing. In addition, the poles should sit on a stable footing, such as a short length of 2x8, to keep them from sinking into the ground. The poles need to be stabilized with diagonal wooden braces. These can go between the poles in criss-

cross fashion, or to stakes driven into the ground. Like stilts, pump jacks are inherently unstable.

To use pump jacks safely, get rid of the pole after you've used it a couple of times. The wood gets chewed up by the pump jacks. Also, oil the pump jacks and don't leave them out in the rain when they're not in use.

One company, Alum-A-Pole, makes a complete pump-jack system using aluminum poles. Rated for three workers, it can be used to a 50-foot-maximum shoulder working height and still be in compliance with OSHA requirements. Alum-A-Pole's system has a safety net that can be attached between the work surface and the work platform (see Figure 6). OSHA requires this where persons are working or passing under the platform.

OSHA requires that a ladder provide access to the platform and that no more than two people work on it at a time. Also, they can't be the crew heavies—no more than 500 pounds total.

Sidewall brackets. Metal sidewall brackets (OSHA refers to these as "carpenters' bracket scaffolds") are light-metal frames that attach to the building frame and support scaffold planks. OSHA requires at least two 2x10 planks—not one like you see on a lot of jobs. Carpenters like to use brackets that nail to studs, but OSHA outlaws these. The rule isn't just arbitrary. Your nail could pull out, or you could hit a weak spot in a stud, and down you'd come. OSHA does approve brackets that bolt to or hook directly around the studs (see Figure 7).

Some sidewall brackets come with connectors for guardrails and toeboards. OSHA requires their use on all scaffolds more than 10 feet above the ground or floor. Install brackets no more than 8 feet apart. And they can't support a lot of weight—only two workers plus 75 pounds of tools at the same time.

Roof brackets. If you're used to standard roof jacks, you can get even more mileage out of the deluxe version. These have folding arms that adjust to various roof pitches (see Figure 8). Because you're working level, tools and material aren't as likely to fall.

I'm going to quote one OSHA requirement for you because it's the subject of controversy. If you use roof brackets on "roofs more than 16 feet from the ground to eaves with a slope greater than 4 inches in 12 inches without a parapet," OSHA requires that "a catch platform shall be installed below the working area...with a guardrail, midrail, and toeboard. This provision shall not apply where employees...are protected by a safety belt attached to a lifeline."

NAHB believes that the cost of complying with this regulation is \$2,000 to \$3,000 per house. They are funding a study by the National Research Center to identify cost-effective and safe alternatives. The result of the study will be presented to OSHA in an effort to have alternatives included in OSHA's revised rule, scheduled to be published this year. I think the use of the safety line and safety belt is a reasonable alternative. Roofing is dangerous work and insurance rates are sky high. Lowering the injury rate may ultimately help lower the cost of liability insurance.

Safety Belts and Safety Lines

When working on ladders, scaffolds, roofs, or anywhere where falling is a threat, you can make your workers feel safer with safety belts and safety lines.

Safety belts are usually made of leather or nylon and are equipped with a D-ring to which a safety line can be attached.

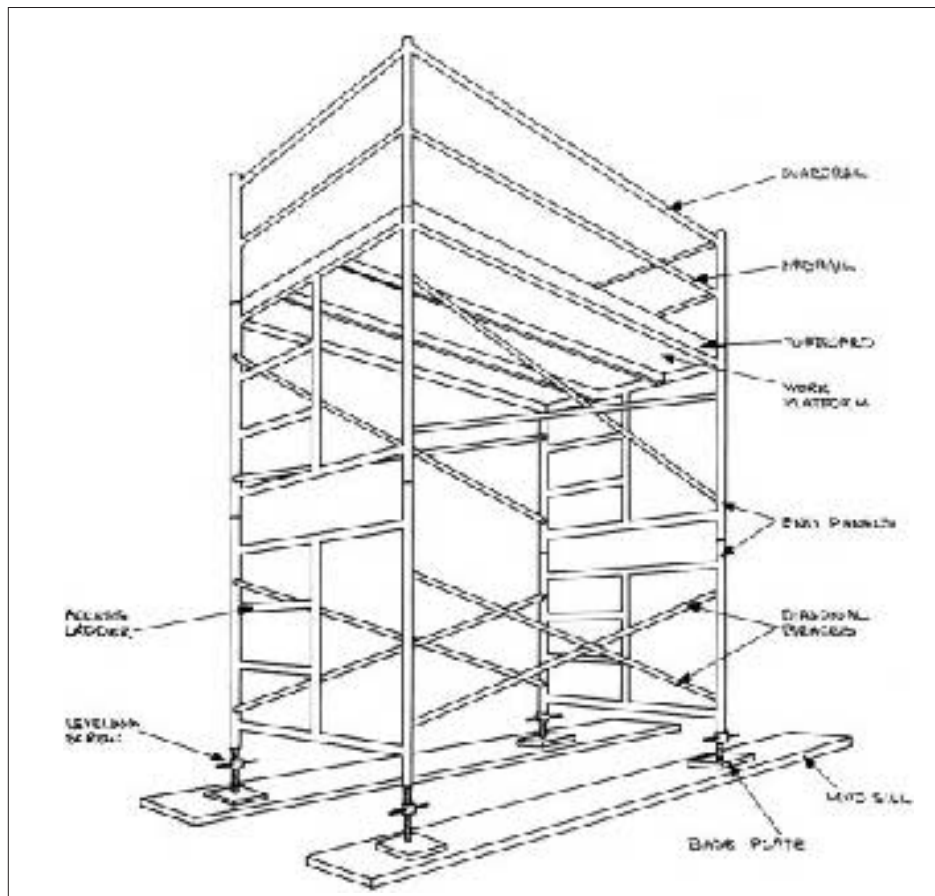


Figure 5. Pipe scaffolding parts are designed for stability and safety.

OSHA and You

In Illinois, a worker recently fell 40 feet off a scaffold. When he hit the open foundation, he impaled himself on two vertical pieces of rebar. Luckily, he survived, but the injury drew media attention. Because the story appeared in the newspapers, OSHA's area office investigated. The accident triggered an inspection of the contractor's work site. Would you have been prepared if this accident had happened to you?

OSHA depends on voluntary compliance. You are responsible for educating yourself about work-site safety and hazards. Any contractor employing one or more workers must comply with the regulations. If you employ more than 11 people, you must also keep records of injuries and lost workdays. If you comply with the law, you'll have little to fear if an accident occurs. If you're lax, OSHA, like the IRS, can hit you up with stiff penalties.

Accidents Happen

OSHA sets priorities for the kinds of accidents it investigates:

- **Catastrophes**—defined as an accident with five or more injuries.
- **Fatality**—one or more workers die.
- **Complaint**—formal and informal complaints. Informal complaints often elicit a letter of inquiry from OSHA.
- **Referral**—someone drives by the job site and phones OSHA about a problem.
- **General inspection**—scheduled from High Hazard lists.
- **Random Inspection**—scheduled from Construction Contractor lists, following a random selection process.

Catastrophe. Let's say there's a catastrophe—something like the Hyatt Regency collapse or the Hartford arena collapse. Or more typically, let's say a large scaffold on a commercial project comes down. Five people wind up in the hospital. OSHA will be out like a shot—the same day. How are they going to find out about this accident? You need to call them immediately.

Fatality. Now let's say one of your workers dies. That falls in the "fatality" category. Again, call right away and tell an OSHA representative an accident has occurred. If you've complied with OSHA regulations, you will want to make sure the inspector gets there and can verify your compliance.

OSHA does not inspect every accident. If the worker doesn't die, but loses a leg instead, OSHA won't necessarily investigate. But if the story appears on the front page of the local newspaper, you can bet OSHA will be on top of you.

Complaints. How about complaints? Nothing prevents a disgruntled employee from complaining. OSHA has a procedure for dealing with complaints—both formal complaints where an employee fills out paperwork, and

informal complaints, for example, where a mom or dad calls up with concerns about their child's workplace.

OSHA sends a letter to the contractor listing the conditions and asks the contractor to handle the matter. If the contractor ignores the letter (OSHA gives them 5 to 10 days), OSHA will make an inspection. If the complaint describes a really hazardous situation, they'll take action more quickly. Let's say a big piece of machinery isn't locked down before workers begin to do maintenance on it. Someone could turn on the equipment and a worker could be killed. OSHA sees that as serious. But they also get complaints about conditions that aren't life threatening. A worker might call and complain about a job site that's dusty and that has drywall scraps laying around on the floor. In that case, OSHA only sends a letter. But they expect the contractor to take care of the problem.

A contractor must prove the problem has been corrected. OSHA expects photos of the corrected problem. Or maybe a photocopied invoice of safety equipment that has been ordered. You can't just claim to have taken care of the problem. You must prove it.

Referrals. Referrals are OSHA's next priority. What exactly is a referral? It's not an OSHA field officer snooping around subdivisions in his Ford Escort. It's reporters, coroners, fire fighters, or police. They may be driving around and spot a scaffold without a guard rail or spot workers without safety belts. OSHA will make an inspection if they receive a referral.

With both complaints and referrals, OSHA may make follow-up inspections. If they believe the employer hasn't made an adequate response, they'll come on the job site to see for themselves.

General inspections. General inspections are way down the list, but OSHA still does them. They try to hit employers who have high hazard work areas or who report a lot of workers out because of injuries.

There are ways to get around these general inspections. You can participate in "voluntary protection" programs. If you participate in a state program, and some of these have requirements that are tougher than OSHA's, you can gain an exemption from a general inspection. But nothing will save you from a complaint, referral, fatality, or, god forbid, a catastrophe.

Random inspections. Way down at the bottom of OSHA's list is the random inspection. How random is random? In residential construction, you have as much chance of being targeted for a random inspection as you do of drying in an air plane crash. OSHA contracts with the University of Tennessee to provide OSHA a random selection list. The University gets the names for its list

from the Dodge Report. If your company isn't listed in Dodge, and most small residential contractors aren't, you'll never be surprised by a random inspection. However, just because you won't be targeted for a random inspection doesn't let you off the hook. In some ways, it is to your advantage to have OSHA inspect and point out any violations before an accident happens. That way you have time to correct them before someone is injured.

Keeping Records

The law requires you to keep records if you have more than 11 employees. If you have less than 10 employees, or if you are self-employed, you don't have to keep records for OSHA.

Injuries all have to be recorded on paper. You can use OSHA form No. 101 (Supplemental Record of Occupational Injuries and Illnesses), or an equivalent state form. Injuries are those that require a visit to the doctor (such as a suture, a prescription, or having a chip removed from the eye). If it's just a Band-aid injury, you don't have to report it. That's considered a first-aid case.

Injury reports. In addition to writing up the injury report on the OSHA form, you have to keep a summary of all injuries. OSHA form No. 200 is the summary form—or "the log"—which must be kept up to date within 45 days. On jobs "of long duration"—like 6 months—you have to keep the form on the job site. In addition, you have to leave this form posted where employees can see it during the entire month of February.

Lost workdays. Let's say an employee is injured on the job and can't come back to work right away. You have to keep records of "lost workdays." You don't record the day the injury occurred or the day the employee comes back. If he shows up at noon, you still don't record it. But you do have to count all the days between, including weekends. Restricted activity also has to be recorded.

If you have "contract" employees, they become yours as far as recordable injuries go. An example is Manpower employees. You supervise their work, but Manpower pays the. Technically, they're your responsibility as far as OSHA is concerned.

Penalties for ignoring OSHA's requirements depend on whether the violation is minor, serious, or repeated. As an example, failure to post records can bring a civil penalty of \$1,000. A willful violation or a repeated violation inflicts a penalty of up to \$10,000. If you don't correct a prior violation, you could be fined up to \$1,000 a day. Realizing that tempers can flare, OSHA also dishes out a \$5,000 fine and a prison sentence of up to three years for assaulting a compliance officer or otherwise resisting, opposing, or intimidating said officer.



Figure 6. Pump jacks are easy to set up. This assembly from Alum-a-Pole features a protective screen that can display company advertising.

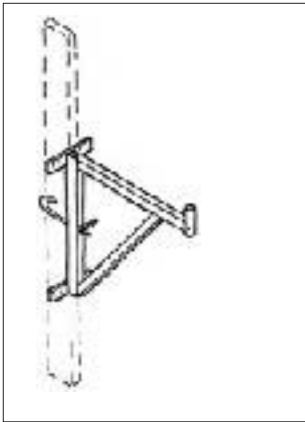


Figure 7. This sidewall bracket hooks around the stud. Don't trust brackets that simply nail into the face of the stud.

The other end of the line is attached to the building or other secure support. Nylon rope or strapping capable of supporting a minimum dead weight of 5,400 pounds is recommended for this use. The only problem with safety belts is that you have to have enough of them for every person.

Whether your job requires a simple ladder or extensive scaffolding, by selecting the right equipment, using good common sense, and adhering to OSHA standards and other safety guidelines, you can assure yourself that you will complete the job safely, efficiently, and legally. Although some of the most important OSHA standards governing

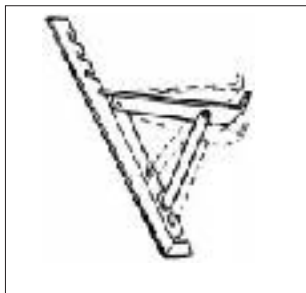


Figure 8. Adjustable roof brackets provide you with a level work surface on any slope of roof.

ladders and scaffolds have been pointed out, I highly recommend that you get a copy of the Construction Industry Standards (#1926) from OSHA and read them yourself. Each employer is responsible for becoming familiar with these standards and ensuring that their employees comply with them. Your life and the lives of your employees could depend on your compliance.

For More Information

The following two organizations can be contacted to obtain further information: OSHA Publications, Room N-3101, Dept. of Labor, 200 Constitution Ave., N.W., Washington, DC 20210; 202/523-8151, and Scaffold Industry Association (References & Safety Info.), 14039 Sherman Way, Van Nuys, CA 91405; 818/782-2012. ■

James T. Stortzum builds houses in Champaign, Illinois.

Manufacturers

Allsafe Ladder and Scaffolding Co., Inc. 48 Ethel Road Edison, NJ 08817 201/287-9400	Kenfor (Scaffold Planks) 75 Center Circle Sulphur, LA 70663 800/551-7197	Rich Ladder P.O. Box 120 515 7th Street Carrollton, KY 41008 502/732-4211
Alum-A-Pole Corporation (Pump Jack System) 2589 Richmond Terrace Industrial Buildings 9A & B P.O. Box 030066 Staten Island, NY 10303-0002 718/447-2608	Louisville Ladder Division Emerson Electric Co. 1163 Algonquinn Parkway Louisville, KY 40208 502/636-2811	Trus Joist Corporation (Scaffold Planks) P.O. Box 60-E Boise, ID 83707 208/375-4450
Biljax, Inc. (Scaffolding) 595 E. Lugbill Rd. Archbold, OH 43502 419/445-8915	Lynn Ladder and Scaffolding Co., Inc. P.O. Box 346 220 South Common St. West Lynn, MA 01905-0646	R.D. Werner Co., Inc. (Ladders & Scaffolding) P.O. Box 580 Greenville, PA 16125 412/588-8600
JAWS U.S.A. P.O. Box 6262 Parsippany, NJ 07054 800/544-JAWS	McCausey Lumber Co. (Scaffold Planks) 36325 Harper P.O. Box 46129 Mt. Clemens, MI 48046 313/792-3620	