



SCAFFOLD SAFETY

Tim Bormann, CIH, FAIHA, The Cohen Group



Have you ever had to use existing scaffolding at a job site to reach your work location, looked at it, and wondered if it was safe to use or not? How can you tell if a scaffold has been properly erected and is safe to climb? Here are some basic things to look for when you're "sizing up" that scaffolding yourself.

Scaffolds must be provided for work that cannot be done safely by employees standing on ladders or on solid construction that is at least 20 inches wide. Scaffold erection and dismantlement must be supervised by a qualified person (8 CCR 1637(k)(1)). Many workers injured in scaffold accidents have received no scaffold training.

A scaffold used for construction should be

inspected by a qualified person before it is used for the first time. It should also be inspected each time it is exposed to conditions likely to cause deterioration such as following adverse weather conditions or following substantial alteration. In addition, Cal/OSHA Construction Safety Order, Scaffolds-General Requirements standard 8 CCR §1637 requires that scaffold planks shall be visually inspected for defects before use each day.

The three basic types of scaffolds are: 1) supported, 3) suspended, and 3) other scaffolds (primarily manlifts, personnel hoists, etc.) The common hazards associated with work on scaffolds include falls from elevation due to lack of fall protection (e.g., guard rails or fall arrest); collapse of the scaffold caused by instability or overloading; being struck by falling tools, work materials, or debris; and electrical shock, primarily due to scaffolds in proximity with overhead lines.

Fabricated frame (supported) scaffolds are the most common type of scaffold because they are versatile, economical, and easy to use. Workers are most vulnerable to fall hazards when climbing or descending a scaffold. Therefore, safe scaffold access must be provided. Erectors and dismantlers of scaffolds face additional access problems due to the incomplete condition of the scaffolding during erection.

According to the Cal/OSHA standard regarding scaffolding access (8 CCR §1637), ladders, horizontal members, and stairways must provide unobstructed access to all platforms. This includes unobstructed access to the platform itself. Ladders, horizontal members, and stairways must be located so that their use will not disturb the stability of the scaffold. Ladders may be used if they are securely attached to the scaffold and must extend three feet above the platform or handholds must be provided. If a ladder is used as a means of access to the scaffold, it must be securely attached and meet all other Cal/OSHA requirements for ladders.

Horizontal members used for access must be parallel and level and must be built into the end frame of the scaffold. Before using horizontal members, ensure they are secure and that they provide sufficient clearance for a good handhold and foot space. The horizontal members must make a continuous ladder, bottom to top, with the ladder sides of the frames in a vertical line. The space between the rungs should be uniform. As a general rule (though not required by Cal/OSHA), the distance between rungs should not exceed 16 inches. When accessing the scaffold through horizontal members, the worker should have both hands free when climbing. In addition, no worker is permitted on scaffold platforms where slippery conditions exist unless the conditions are a necessary part of the work.

All stationary scaffold legs, including those of outriggers, need to be located upon base plates. Each base plate support must be adequate to sustain the load and prevent horizontal movement. When the scaffold or outrigger is resting on earth or soft material, the base plate must be secured to the equivalent of a 2-inch by 10-inch by 10-inch wooden base, or a 1 1/8 inch by 10-inch by 10-inch piece of exterior grade plywood. As a



general rule, the metal scaffold must be securely tied to the building or structure by means of a double-looped #12 iron wire, or single-looped #10 wire (or equivalent) at intervals of at least 30 feet horizontally and 26 feet vertically. The last tie must be no further from the top of the scaffold than 4 times the least base dimension of the scaffold.

Once on the working platform, fall protection must be provided by guardrails or a fall arrest system. Guardrails are preferred over fall arrest systems. The railing must be installed on all open sides and ends of platforms. The top rail must be at a height of between 42 and 45 inches. A midrail must also be provided approximately halfway between the top rail and the platform. "X" bracing may be used as a top rail if the intersection of the "X" occurs between 42 and 48 inches above the work platform. In addition, a horizontal rail must be placed between 19 and 25 inches above the work platform.

Platform planks must be at least 2-inch by 10-inch boards and must overlap the scaffold ledger by at least 6 inches. The edge of the platform can be no more than 16 inches from the building or structure. Platform planks cannot be placed on guardrails to obtain greater height.

Bottom Line:

Quickly check over the scaffold assembly before each use to see that:

- it appears to be level and plumb,
- base plates are in solid contact with “mud sills” or other firm footings,
- bracing is in place and connected,
- platforms are fully planked,
- guardrails and toe boards are in place,
- safe access to the platform is provided,
- it is properly tied and/or guyed (if needed), and
- there are no overhead obstructions or electric lines within 12 feet of the scaffold assembly.

These are just a few requirements workers and foremen should keep in mind when using scaffolding, particularly when the scaffold that is being used was installed by another contractor.

