

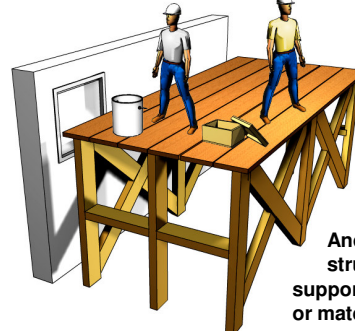


Working at Heights: How to Survive while on Scaffolding

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A Scaffold is any Temporary Elevated Platform



And it's supporting structure used for supporting employees or materials or both

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The Five Most Serious

Scaffold Hazards

1. Falls
2. Unsafe Access
3. Struck by falling objects
4. Electrocutation
5. Scaffold Collapse

First letters spell Fuses

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Are you familiar with the GENERAL DUTY CLAUSE?

Public Law 91-596
91st Congress, S. 2193
December 29, 1970
As amended by Public Law 101-552
Para. 3101, November 5, 1990

DUTIES

SECTION 5. (a) Each employer--

(1) shall furnish to each of his/her employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his/her employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

SECTION 5. (b) Each employee--

shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his/her own actions and conduct.

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Do you know that:

Scaffolds and Scaffold components shall be inspected for visible defects by a competent person before each work shift, and after any occurrence which could affect a scaffold's structural integrity.

OSHA 29 CFR 1926.451(f)(3)

Do you also know that:

Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and directions of a competent person, qualified in scaffold erection, moving, dismantling or alteration. Such activities shall be performed only by experienced and trained employees selected for such work by the competent person.

OSHA 29 CFR 1926.451(f)(7)

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29 CFR 1926.451

Competent Person

Definition:

Competent person means one who is capable of **identifying** existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees and who has **authorization** to take prompt corrective measures to **eliminate** them.

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29 CFR 1926.451

Competent Person

Must have had specific training in and be knowledgeable about the structural integrity of scaffolds and the degree of maintenance needed to maintain them. The competent person must also be able to evaluate the effects of occurrences such as a dropped load, or a truck backing into a support leg that could damage a scaffold. **In addition, the competent person must be knowledgeable about the requirements of this standard.** A competent person must have training or knowledge in these areas in order to identify and correct hazards encountered in scaffold work.

Preamble, page 46059

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29 CFR 1926.451

Qualified Person

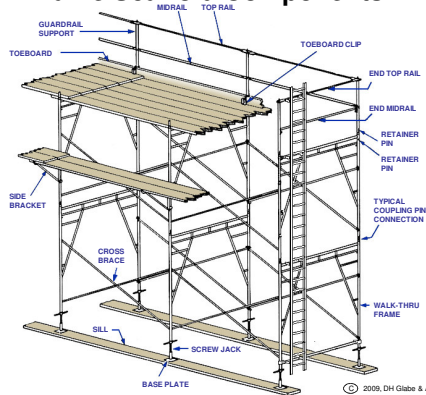
Definition:

One who by possession of a recognized degree, certificate or professional standing, or who by extensive knowledge, training and experience, **has successfully demonstrated** his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

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Frame Scaffold Components

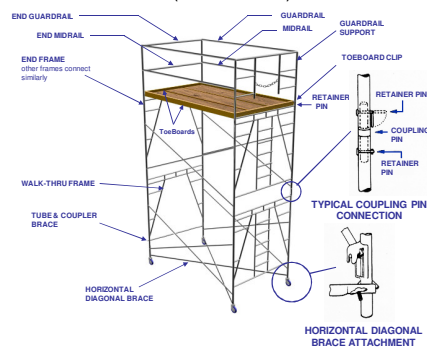


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TYPICAL ROLLING SCAFFOLDS

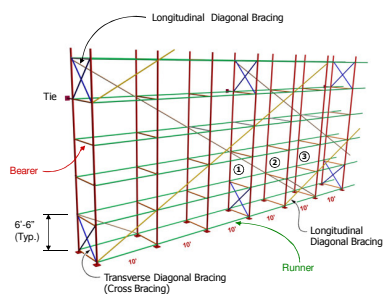
(Towers not higher than 4 times the narrowest base dimension)
(3 times in California)



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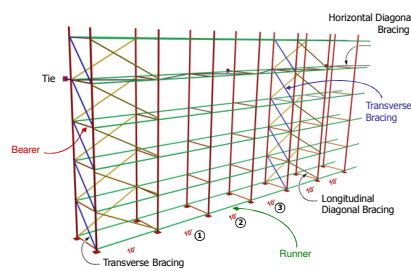
Tube & Coupler Scaffold Components



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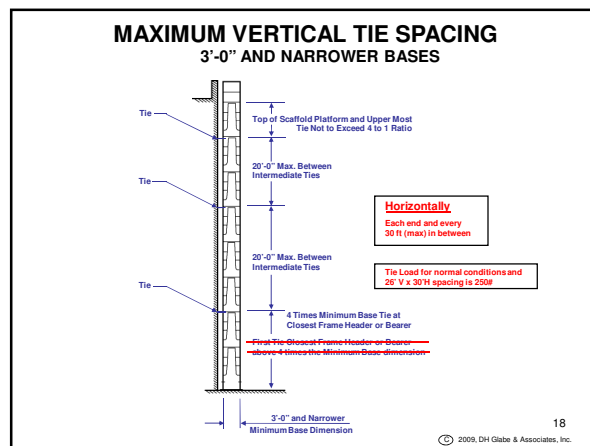
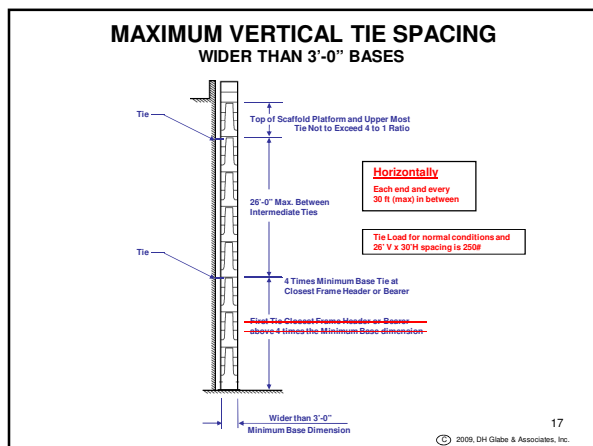
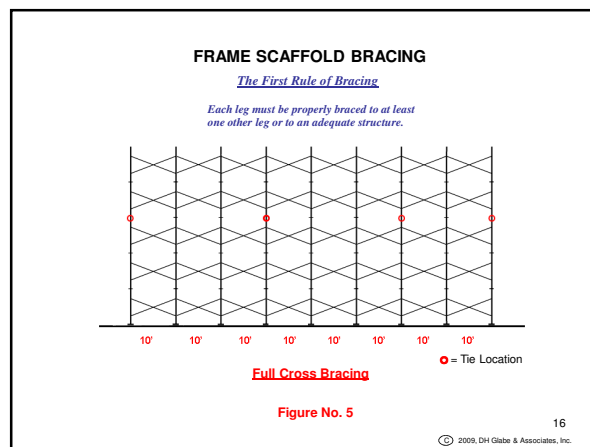
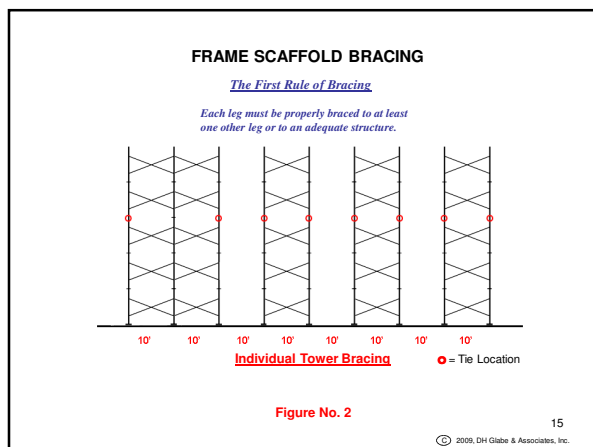
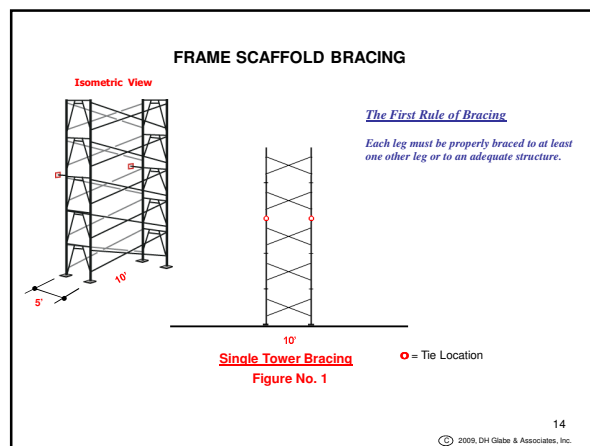
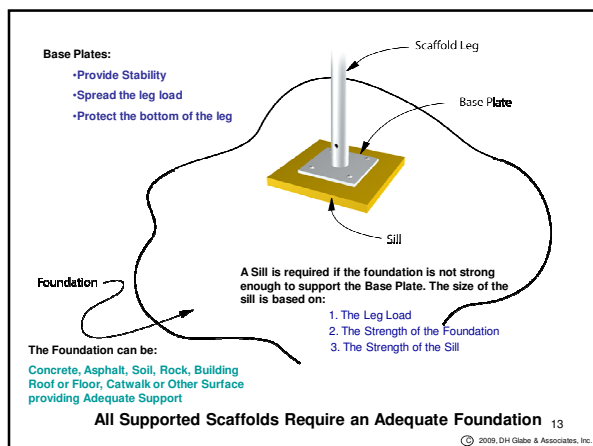
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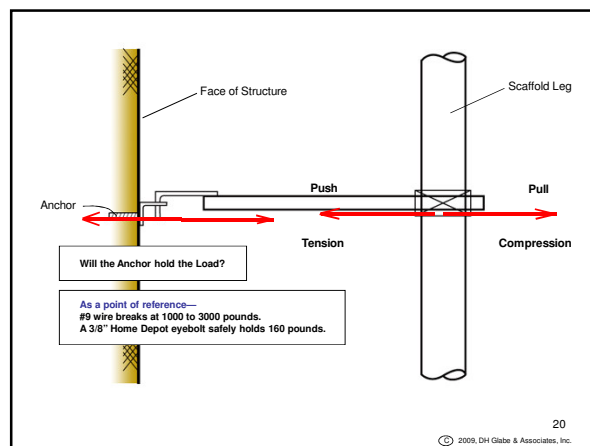
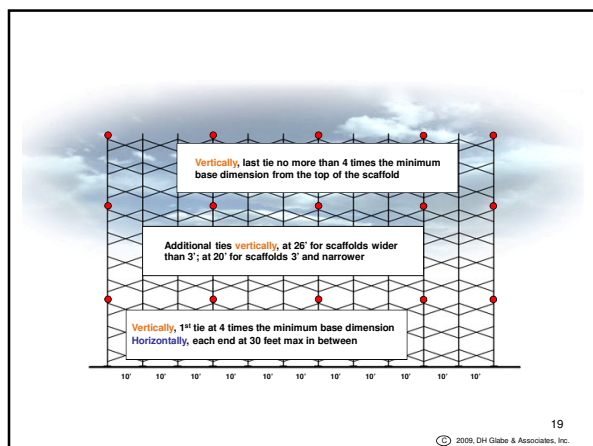
Systems Scaffold Components



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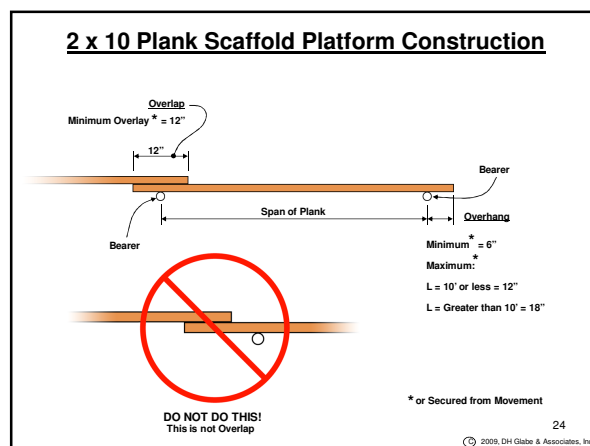
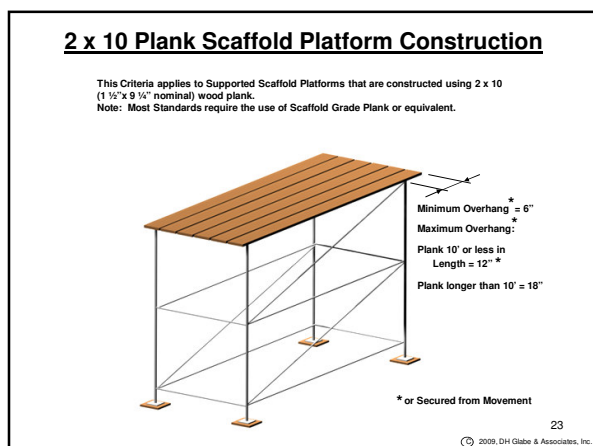
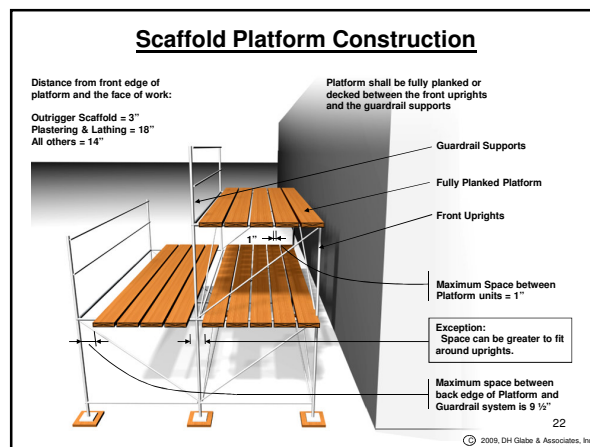


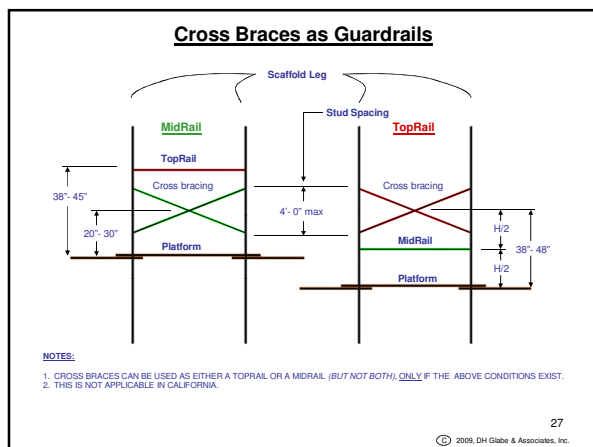
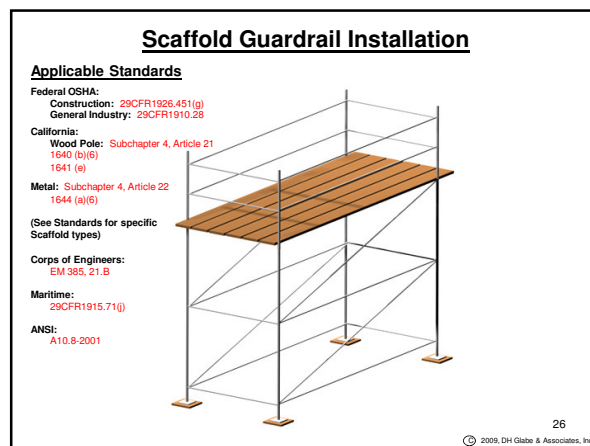
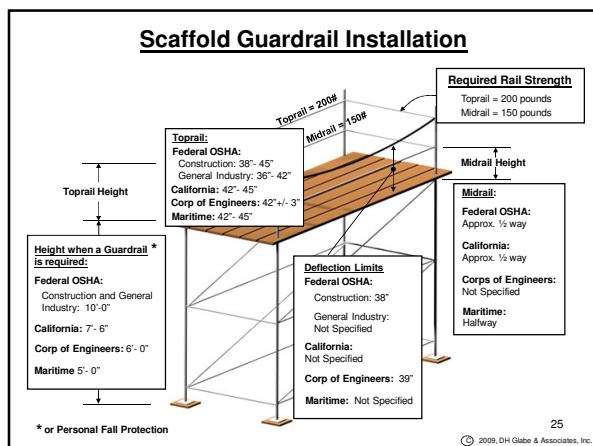
Tie Loads for 26' x 30' Tie Spacing

Wind Speed (mph)	Pressure (psf)	Open Scaffold (pounds)	Enclosed Scaffold (pounds)	Example Only! Do not use for your Scaffold. Wind Description
10	0.4	25	312	Leaves, small twigs in constant motion; wind extends light flag.
20	1.5	90	1200	Fresh breeze; Small trees in leaf begin to sway flag.
30	3	180	2300	Large branches in motion; umbrellas used with difficulty.
40	6	350	4700	Gale winds; Twigs break off trees; generally impedes progress.
50	9	520	7000	Slight structural damage occurs (chimney-pots, slates removed).
60	12	700	9400	Storm; trees uprooted; considerable damage occurs.
70	17	1000	13300	Rarely experienced; accompanied by wide-spread damage.
80	22	1300	17200	Hurricane
90	28	1625	22000	Hurricane
100	34	2000	26500	Hurricane

Remember: #9 wire breaks at 1000 to 3000 pounds; A 3/8" Home Depot EyeBolt safely holds 160 pounds.

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Physics of a Fall

Elapsed Time	Distance Traveled	Speed MPH	Force at Impact	Human Response
0.00	0	0	0	None
0.25	1 ft	5.5	400 lbs	Aware
0.50	4 ft	11	1600 lbs	Aware
0.61	6 ft	13.3	2400 lbs	Reflex
0.75	9 ft	16	3600 lbs	Thinking about Movement
1.00	16 ft	22	6400 lbs	Start Movement
1.25	25 ft	27	10000 lbs	Slight Movement
1.50	36 ft	33	14000 lbs	Movement!
1.75	49 ft	38	19600 lbs	Considerable Movement!

*Note - Calculations based upon a 180 pound worker carrying 20 pounds of tools.

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Scaffold Erector Fall Protection Requirements

- The employer shall have a competent person determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds.

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Fall Protection Anchors

- Anchors must hold 5,000 pounds or:
- Shall be designed by a qualified person;
 - Have a safety factor of 2;
 - Limit the load on the body to 1800 pounds;
 - Limit freefall to 6 feet;
 - Limit deceleration distance to 3.5 feet;
 - Not hit the level below.

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