

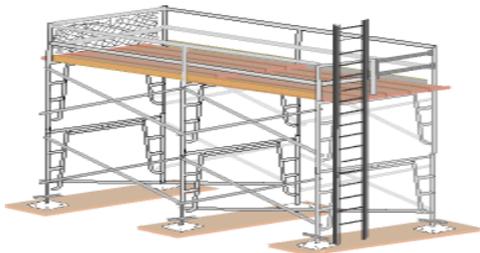
SCAFFOLDING



Scaffolding Systems

Aerial Work Platforms

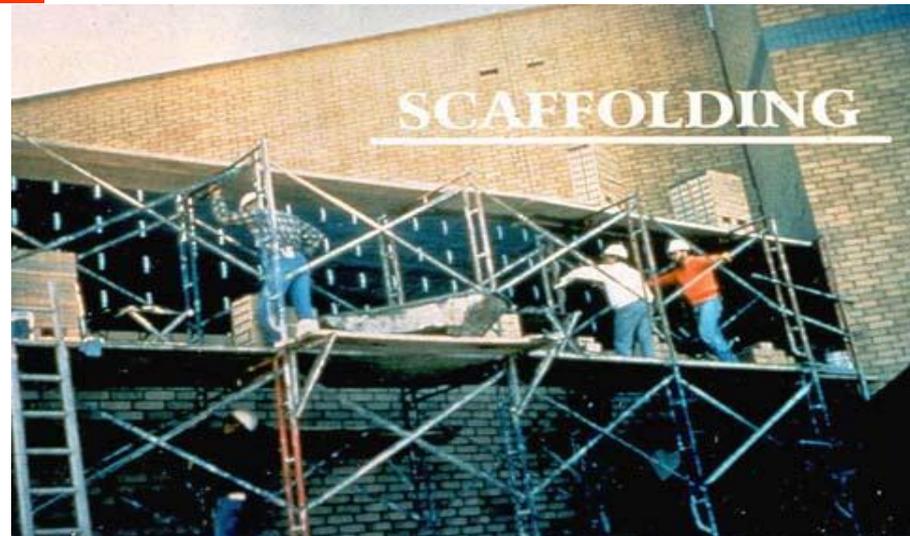
Access ways



Scaffolding Fall Statistics



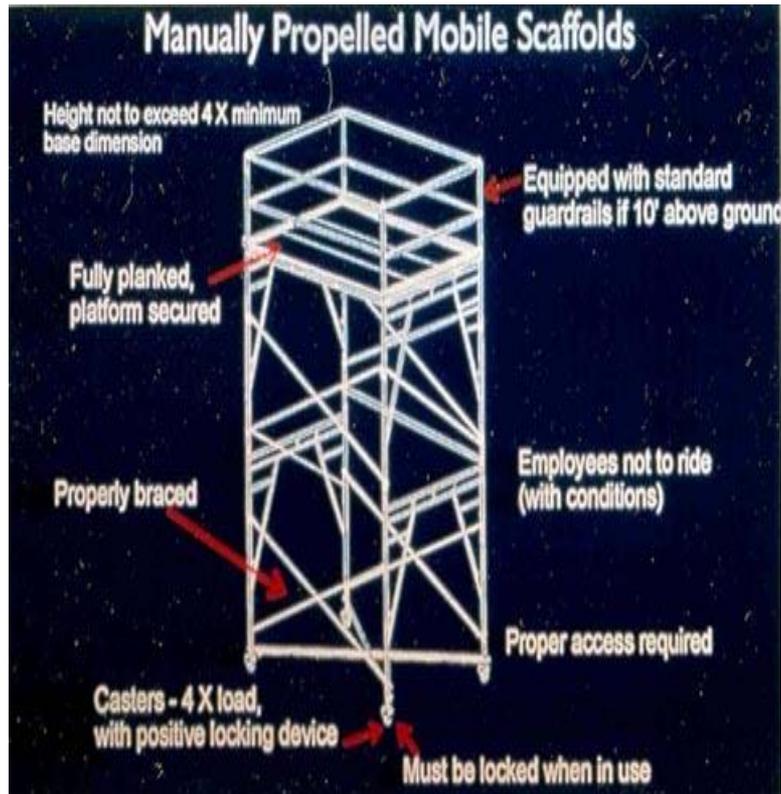
65% of all construction workers will use some form of a scaffolding system frequently. Scaffolding accidents at construction sites are typically the most serious in terms of severity. Usually result from construction workers' falls from defective, improperly installed, or unreasonably unsafe scaffolding equipment.



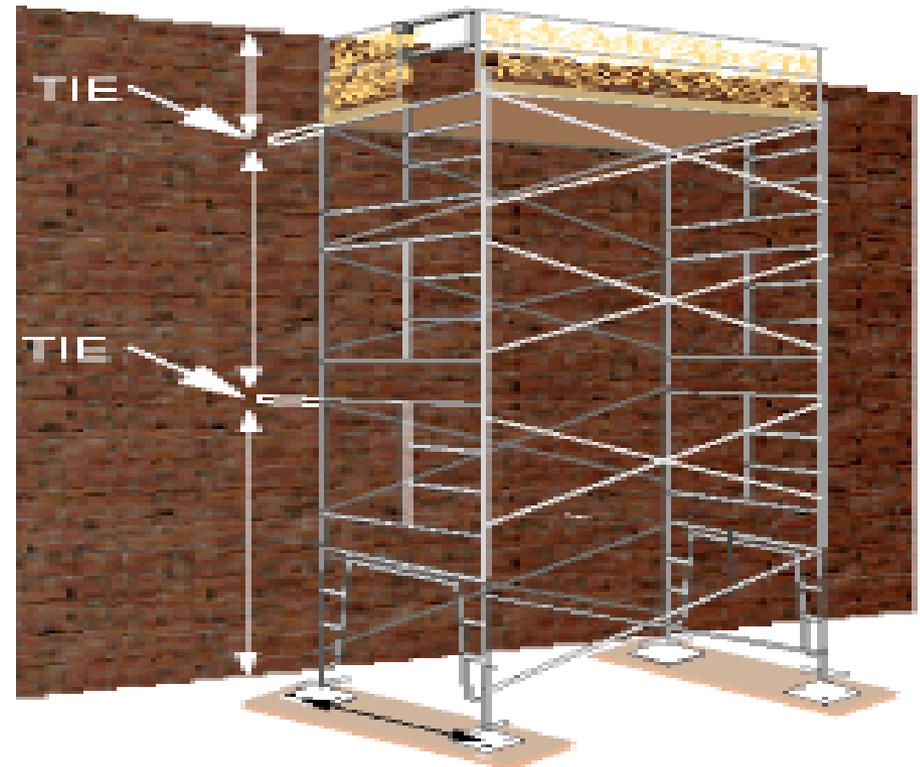
Scaffolding Most Common Types



Mobile



Metal Fabricated Frame (Masons)



See Page 19

Scaffolding Violations



1. Working platform not fully planked
2. Improper footing, screw-jacks, foundations
3. No proper access provided
4. No proper guardrails, toe-boards, or bracing
5. No proper falling object protection for workers
6. Not inspected daily



Scaffold Competent Persons



- **AN AHA for workers conducted by the competent person for fall protection detailing rationale for infeasibility of use of fall protection during erection and dismantling shall be submitted and accepted by the GDA.**
- **Single point or two point suspended requires workers to be tied off to independent vertical lifeline using a full body harness**
- **Elevating work platforms/Scissors lifts shall be equipped with standard guardrails and if the scissor lift is equipped with a manufactured anchorage, a restraint system, lanyards shall be sufficiently short to prohibit workers from climbing out of, or being ejected from the platform, shall be used in addition to guardrails**

- **Be on a firm foundation with base plates**
- **Be plumb, square and adequately braced**
- **Have a fully planked work deck**
- **Have guardrails over 6 feet**
- **Be tied in over 4 Vert./1 Horiz. high**
- **Have an adequate means of access**



- **Scaffolds must have base plates, even when setting on a concrete floor.**
- **Also, the lack of a base plate could damage the scaffold leg.**

- **Scaffold legs must be set on base plates and adequate mudsills.**
- **There is no base plate and the scrap plywood is not adequate.**
- **The scaffold frame could penetrate the plywood.**



Never on Masonry!



- **Scaffolds should never be set on bricks, masonry blocks, etc.**
- **These are not structural elements and could crush under the scaffold load.**



All Scaffolding Systems



On site: A copy of manufacturers operating manual or guidance from the Scaffolding, Shoring, and Forming Institute

See Pages 20-24 for Code of Safe Practices published by the Scaffolding Industry.



Designated in writing on the AHA the name of the competent person for erection and dismantling of scaffolding



All Scaffolding Systems



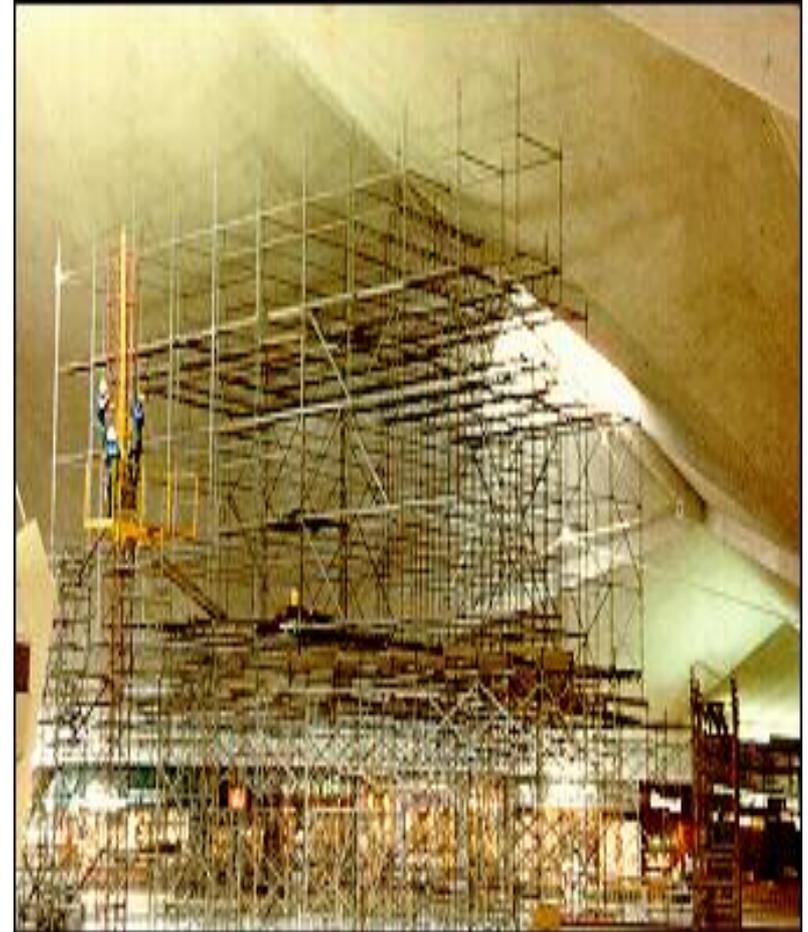
CONTRACTORS SHALL USE A SCAFFOLD TAGGING SYSTEM IN WHICH ALL SCAFFOLDS ARE TAGGED BY THE COMPETENT PERSON. TAGS SHALL BE COLOR CODED:

GREEN=SCAFFOLD INSPECTED AND SAFE TO USE

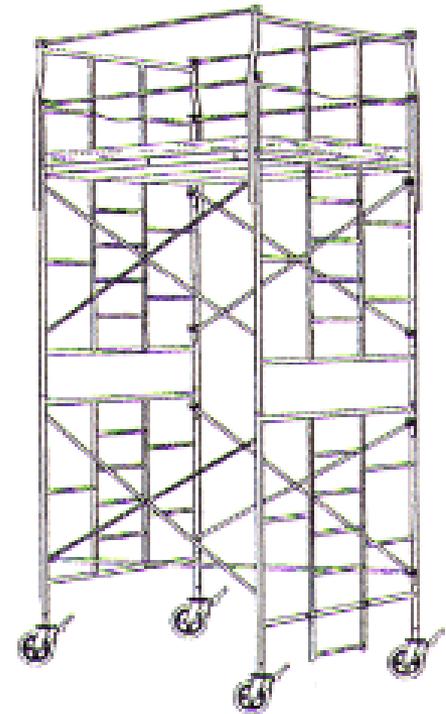
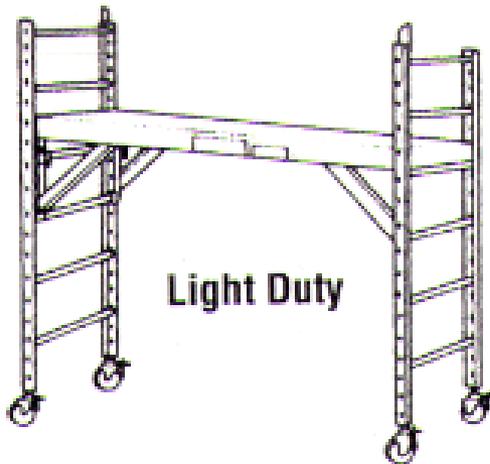
RED= SCAFFOLD IS UNSAFE TO USE

TAGS SHALL INCLUDE THE COMPETENT PERSONS NAME AND SIGNATURE AND DATES OF INITIAL AND LAST INSPECTIONS

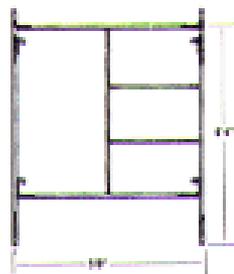
Fabricated Frame (Mason Scaffold)



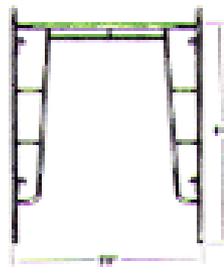
TYPES OF SCAFFOLDING



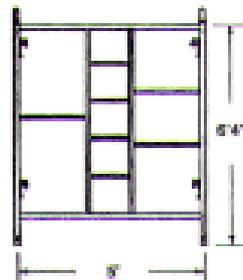
We have many frame styles. Here are some examples:



MASONRY FRAME



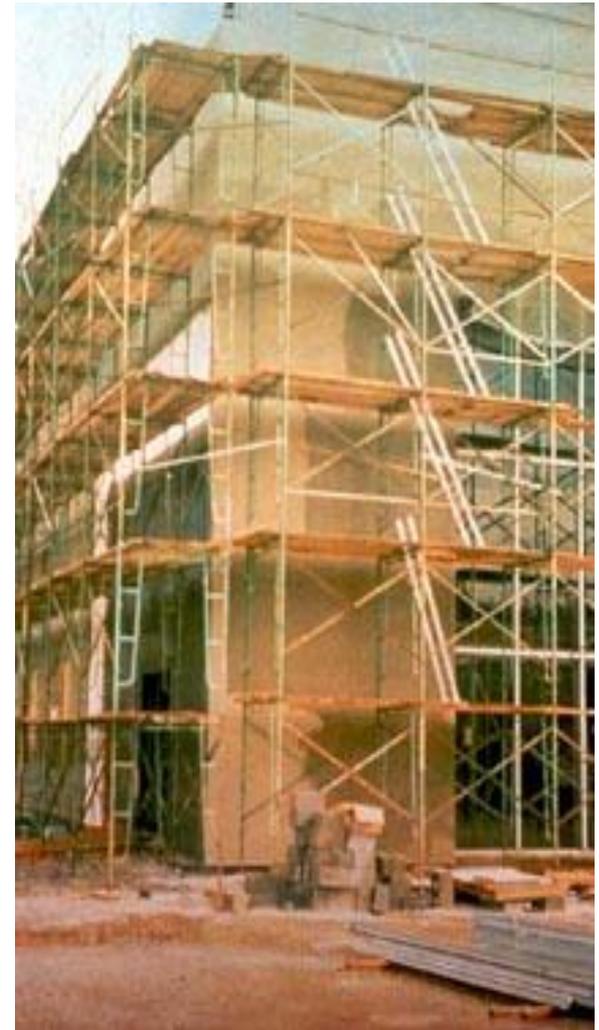
WALK-THRU FRAME



ACCESS LADDER FRAME

SCAFFOLDING

- 1. Outrigger Scaffold**
- 2. Needle Beam Scaffold**
- 3. Interior Hung Scaffold**
- 4. Bricklayers Square Scaffold**
- 5. Float/Ship Scaffold**
- 6. Boatswain's Scaffold**
- 7. Window Jack Scaffold**
- 8. Carpenter's Bracket Scaffold**



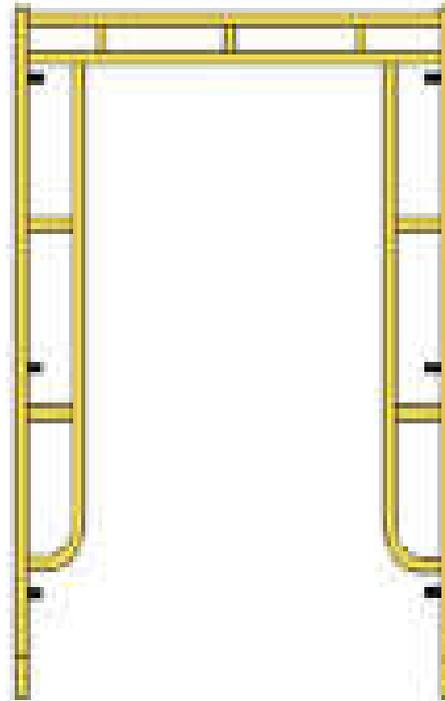
MASON FRAME SCAFFOLD



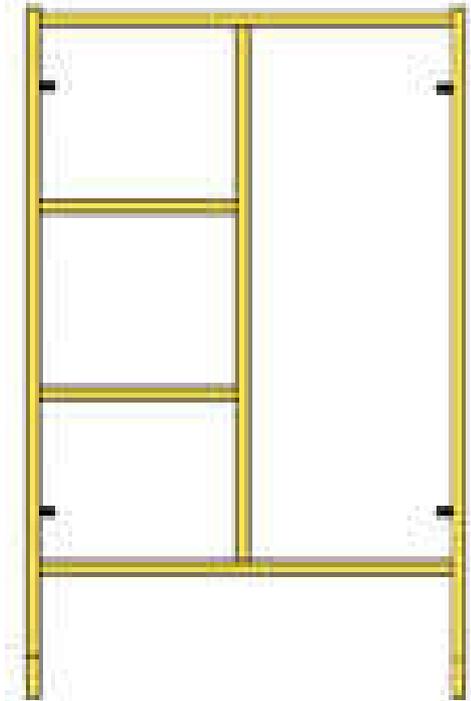
COMPETENT PERSON
REQUIRED IN WRITING
ON AHA FOR ERECTION AND
DISMANTLING

CAPABLE OF SUPPORTING
FOUR (4) TIMES INTENDED
LOAD

LIGHT, MEDIUM, & HEAVY
DUTY SCAFFOLDING.
MAJOR DIFFERENCE IS THE
SPACING OF THE FRAMES



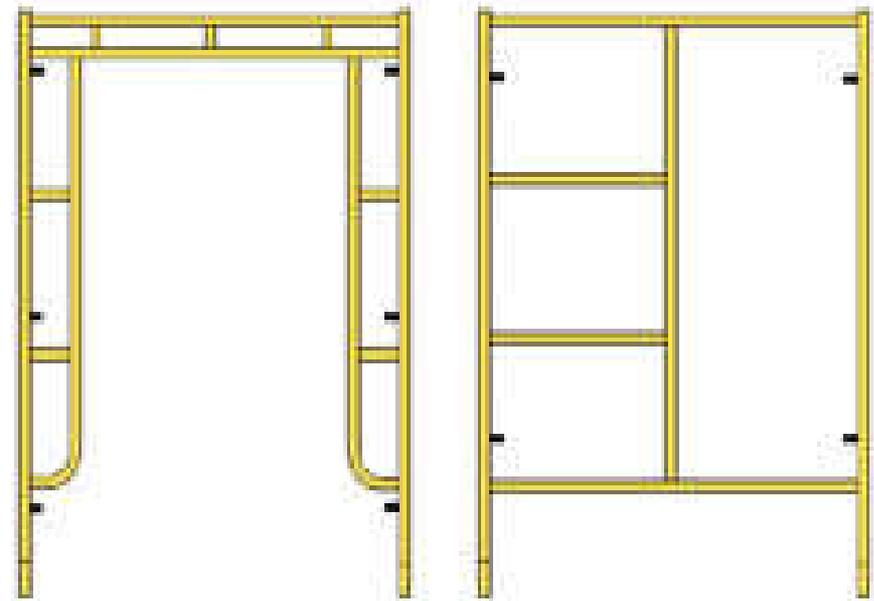
Walk Through



Single Ladder Box

FRAME SUPPORT WEIGHT LIMITS

- Light Duty Scaffold **2" Posts**, 10Ft Spacing max load = 25PSF
- Med. Duty Scaffold **2 1/2" Post**, 8' Spacing max load=50PSF
- Heavy Duty Scaffold **2 1/2" Post** 6' Spacing max Load= 75PSF
- NEVER OVER 125' High



Walk Through

Single Ladder Box

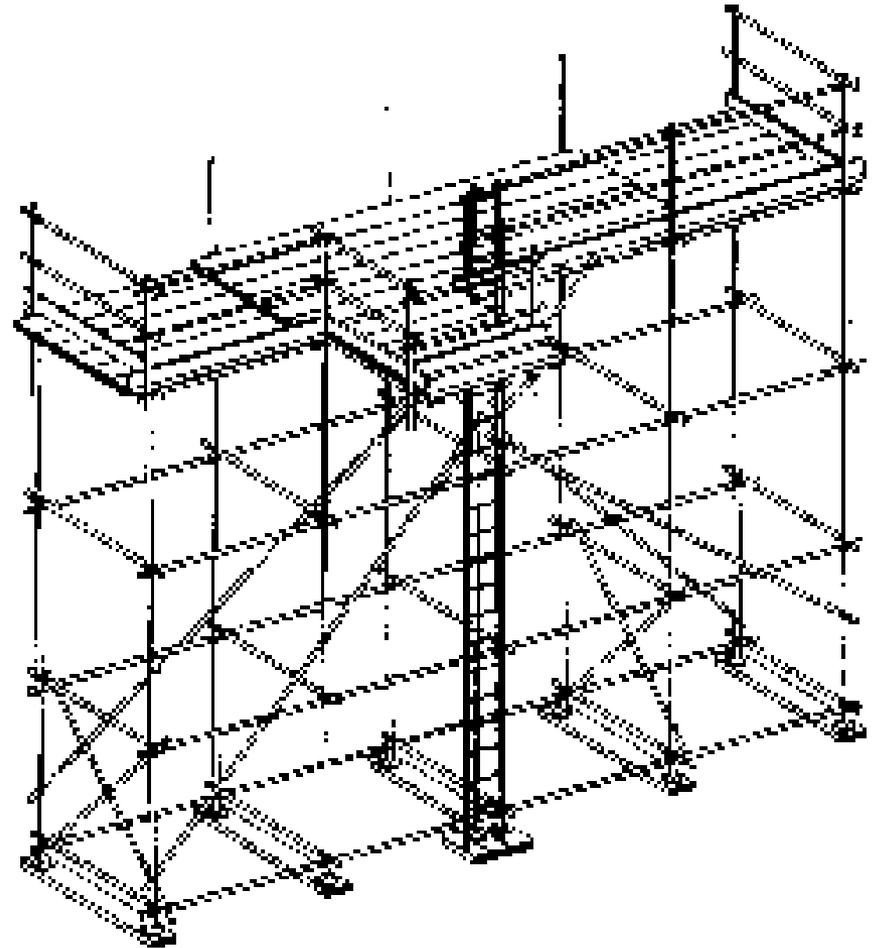
What special requirements are necessary for scaffolding that is to be over 125" high?



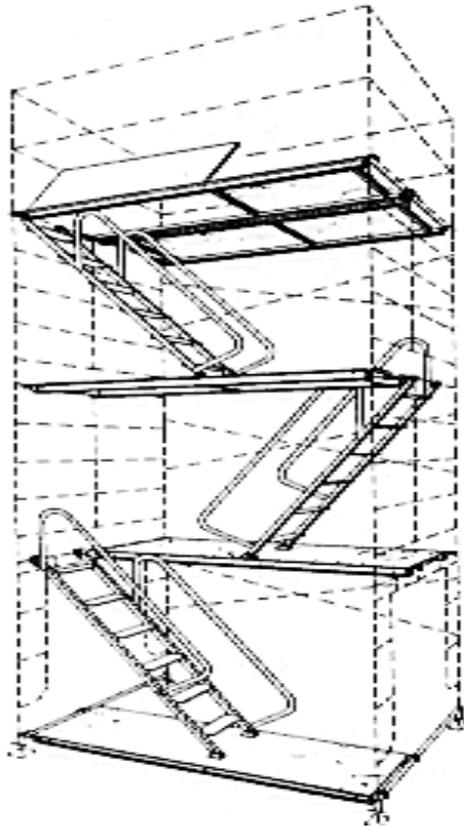
SECURING A SCAFFOLD TO BUILDING A CRITICAL ITEM!!



- First Tie Level is at a point that is no more than four times its narrowest base including the outriggers.
- Vertically no more than 26' and no more than the narrowest base from the top.
- Horizontally at the first tie level, at each end and no more than 30 foot apart

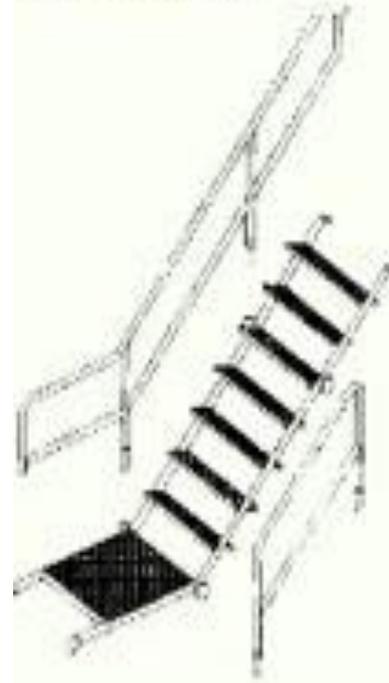


SCAFFOLD ACCESS



Accessways

Stair Units



Ladder & Bracket



SCAFFOLD GRADE PLANKS



Solid sawn wood, selected for such use by recognized lumber grading agency or independent agency. Planks to be identified by the **GRADE STAMP of the agency. The agency is to be certified by American Lumber Standard Committee.**

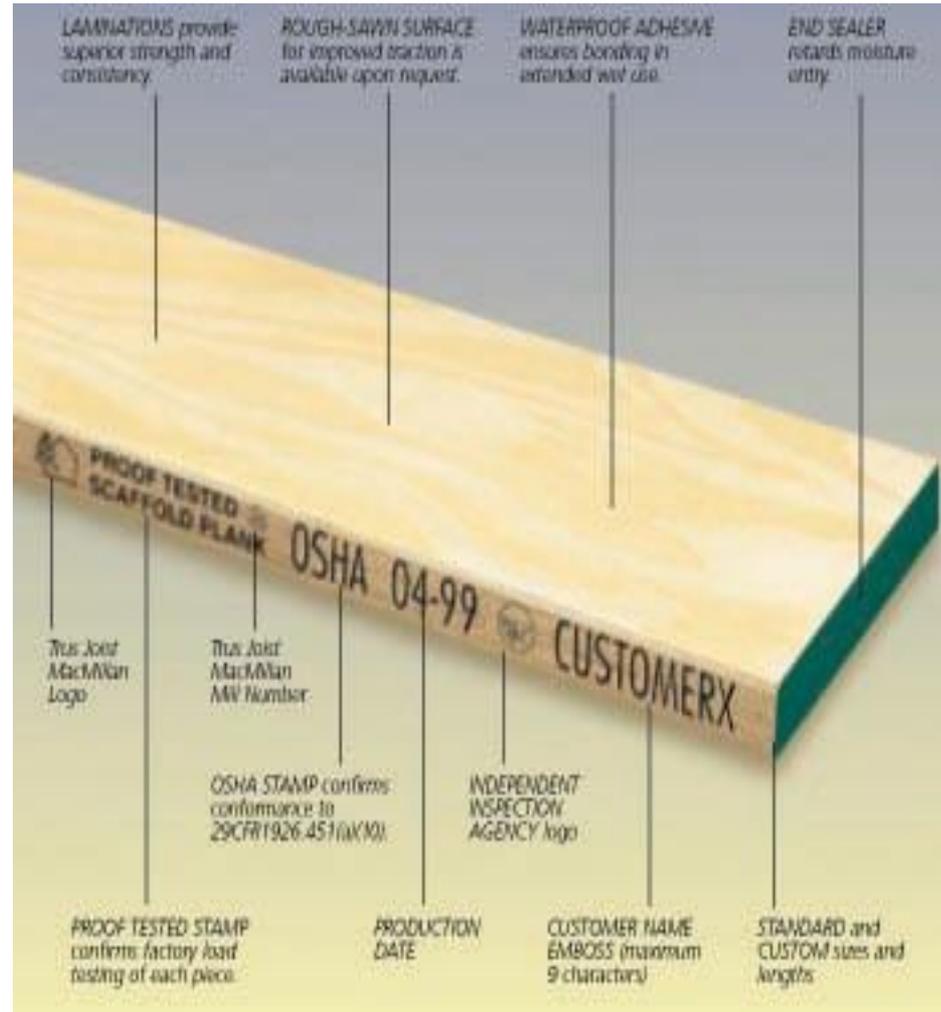
Note: **AGENCY STAMP will clearly indicate “scaffold plank”**

Ref: 1926 Subpart “L” Appendix A paragraph 1 (b)

SCAFFOLDING PLANKS



- Working Platform to be full width to rails
- **Scaffold Grade Planks**
- Extend over ends not less than 6 or more than 12
- Planks overlapped a minimum of 12



SCAFFOLDING PLANKS

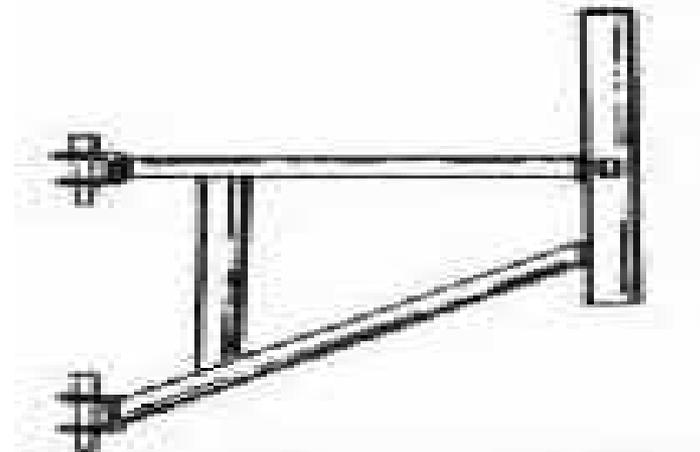


- **MANUFACTURED PLANKS**
- **THE WORKING LEVEL OF SCAFFOLDING IS TO BE FULLY PLANKED TO THE**
- **STANDARD RAIL BEHIND THE WORKER**



SCAFFOLD ACCESSORIES

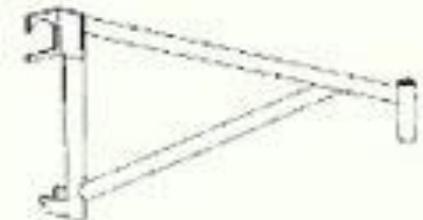
- **SIDE OR END BRACKETS**
FOR: Personnel use next to building **NEVER** on outside of scaffolding for material landing and storage to eliminate tipping effect on scaffold
- See 22.B.10



Casters

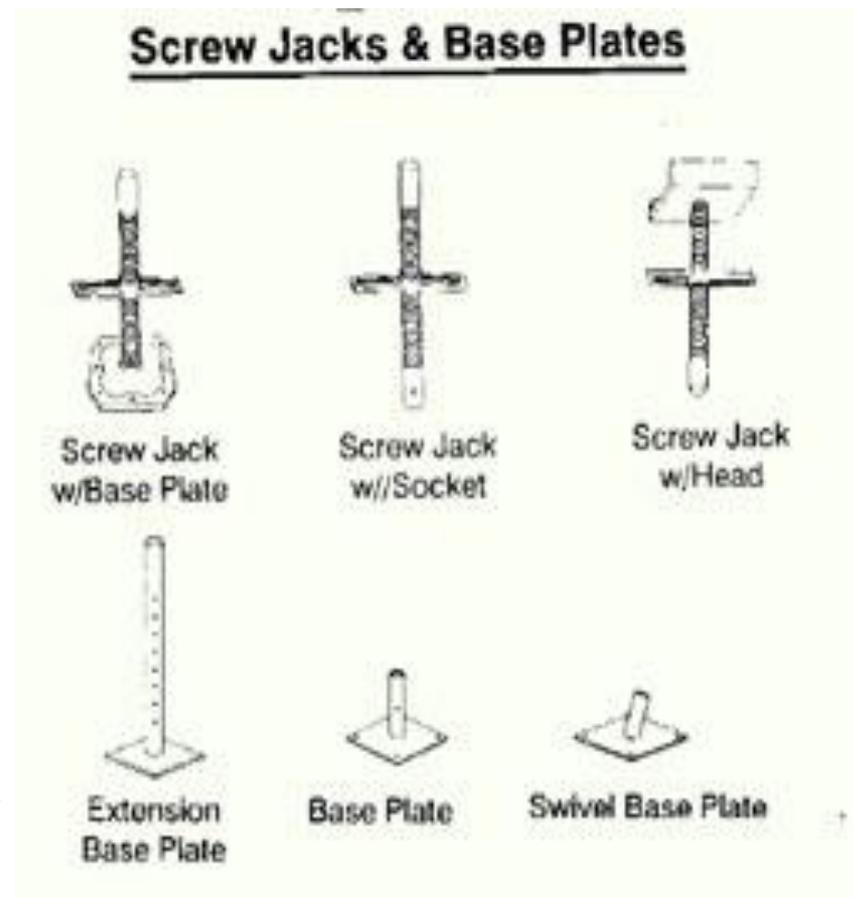


Side Bracket



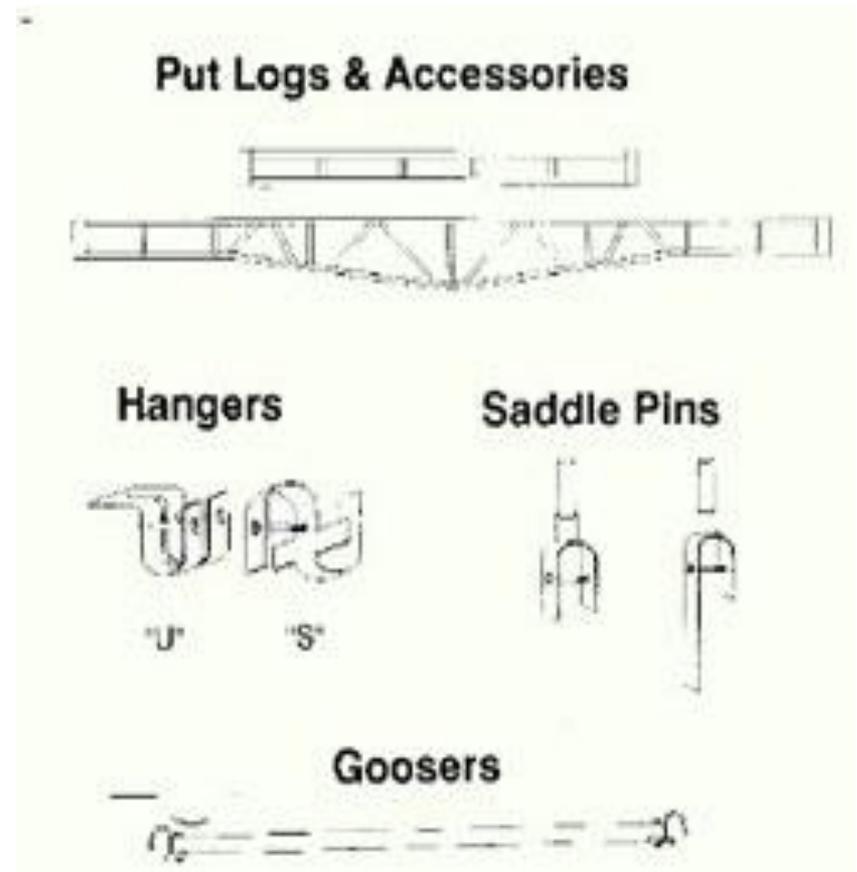
SCAFFOLD ACCESSORIES

- **Base Plates/Screw Jacks** for leveling.
- **Scaffolding Plumb**
- **Never use blocks, bricks or unapproved material** under legs of scaffolding



SCAFFOLD ACCESSORIES

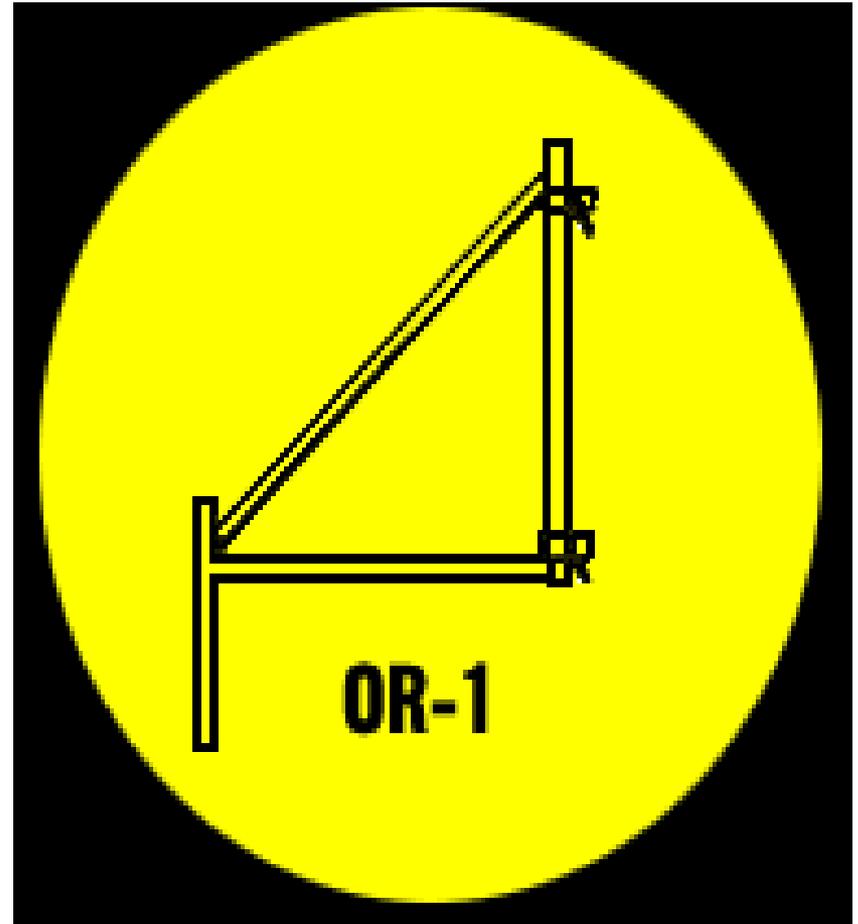
- PUTLOGS
- TO SPAN WIDER AREAS THEN NORMAL SCAFFOLD BRACE LENGTHS. FOR AREAS OVER A DOORWAY OR OBSTRUCTIONS



SCAFFOLDING ACCESSORIES



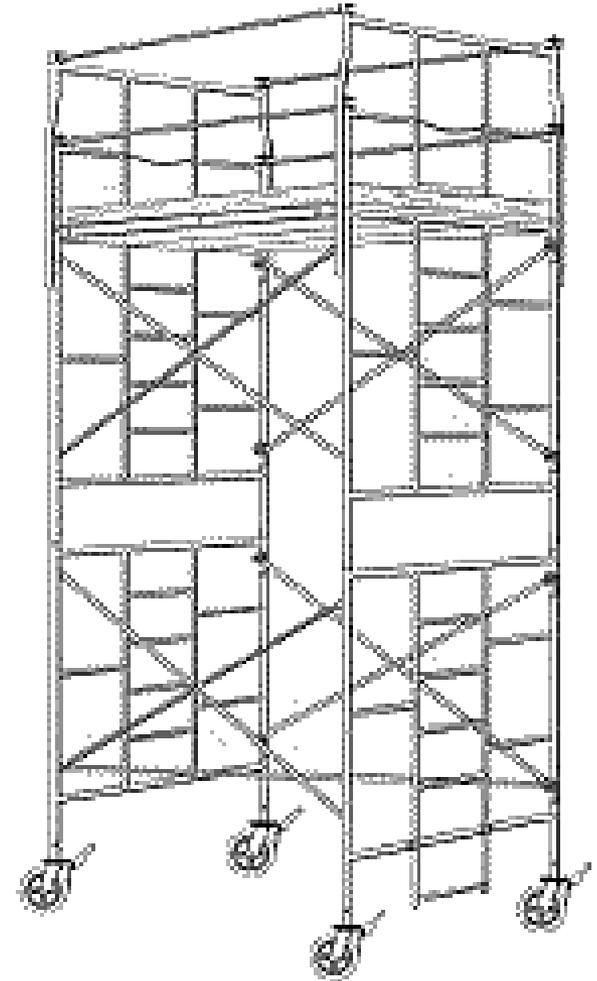
- **OUTRIGGER:**
- **TO INCREASE BASE WIDTH OF A SCAFFOLD IN ORDER TO PROVIDE SUPPORT AND INCREASE STABILITY UP TO A MAXIMUM OF 4 TO 1 RATIO**



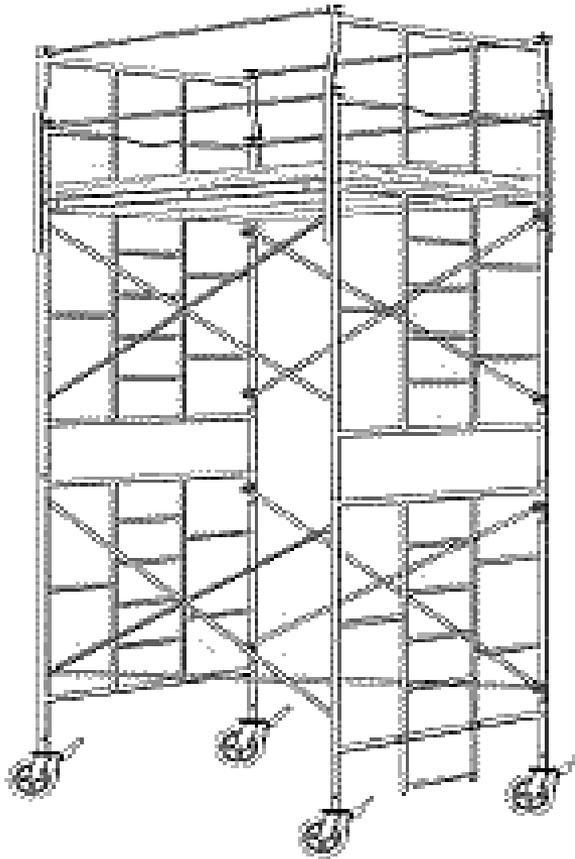
MOBILE SCAFFOLDS



Free standing mobile scaffold
working platform heights
shall not exceed **THREE**
TIMES the smallest
base dimension!
COE Section 22.C.06 e



Common Types Mobile Scaffolding



Rolling/Mobil Scaffold



0127-006-0
Single Unit



0127-006-1 shown in a typical maintenance application.

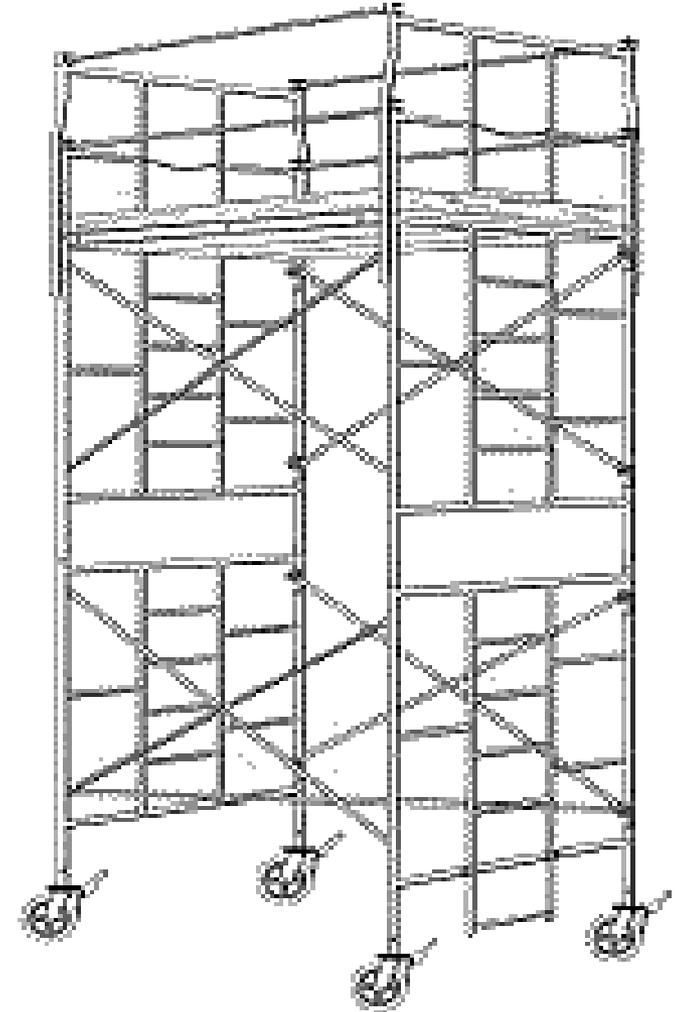
“Baker” Scaffolding



MOBILE SCAFFOLDS



- 1. Wheels Positive Locking**
- 2. Locked when in use**
- 3. Free standing mobile scaffold
working platform height not
more than 3 times smallest base
dimension**
- 4. Proper Access**
- 5. Proper Railing**
- 6. See COE 22.C.06**



SCAFFOLD QUESTIONS?

1. What is the maximum allowed height of a free standing mobile scaffold working platform ?



2. What is specific name for the person who is to be designated for the erection and dismantling of scaffolding? On what document should this person be designated in writing for this phase of work?



SCAFFOLD QUESTION ANSWERS



1. A Mobil Scaffold without outriggers can be no higher than **3 times its smallest base dimension to the working platform.**



2. A **Competent Person** must be designated for the erection and dismantling of Scaffolding. The **Activity Hazard Analysis (AHA)** would be the best place to indicate the competent person for the phase of work involving scaffold erection or dismantling. (See Scaffold Checklist)



SCAFFOLD QUESTIONS??



1. How wide is the width of the planks on the working level of scaffolding?



2. When a scaffold exceeds 4 times the narrowest base (including outriggers) What is the rule for securing vertical ties to a structure?



SCAFFOLDING ANSWERS



1. The working level of a scaffold is to be fully planked.

(22.b.05)



2. A scaffold that exceeds 4 times the narrowest base including outriggers must have vertical ties placed at this point (4 times the base) but in all cases no greater than **26 feet**.

(22.B.09 a)



Scaffolding Question



The first tie for a scaffold is 4 times the narrowest width, but in all cases no greater than 26 feet. What is the continued interval of the vertical ties and how far from the top of the structure is the top tie?



Where is the first horizontal tie placed initially, And then at what distance apart?



Scaffold Answers



Vertical ties are placed at intervals not greater than 26 feet after the first tie is placed. The top tie is placed no lower than 4 times the narrowest base dimension from the top.

22.B.12 b



Horizontal ties are placed at the location of the First vertical ties at each end of the building and No greater than 30 feet apart. 22.B.12 c



Scaffolding Question

What person must be designated in writing for the erection and dismantling of scaffolding systems?



What document must be prepared, submitted and approved by the government before the erection and dismantling of scaffolding?



Scaffolding Answers



**Competent person
designated in
writing**

Activity Hazard Analysis



Elevated Work Platforms



A vertically-adjustable, integral chassis, power operated work platform, which may be horizontally extended or rotated relative to the elevating mechanism; an integral frame boom supported power operated elevation work platform which either telescope, articulate, rotate, or extend beyond their base dimensions. (See page 6)

Scissors lifts, if equipped with anchor point, shall require restraint in addition to guard



AERIAL LIFTS/BUCKET TRUCKS



Aerial lift equipment shall use lanyard sufficiently short to prohibit worker from climbing out of basket

Daily walk around inspection IAW manufacturers instructions



WORKERS REQUIRED TO USE PFAS

ELEVATED WORK PLATFORMS



**Aerial Articulating
Boom Lifts**



**Elevated Work Platform
Scissors Lifts**

Elevated Work Platforms

1. Alarm Equipped to sound if 5 degrees out of level.
2. Inspection Records at the work site
3. Manufacturer's Inst to be with equipment
4. Fall Protection IAW Manufacturer's Inst
5. PFAS if platform is extended outside wheels

