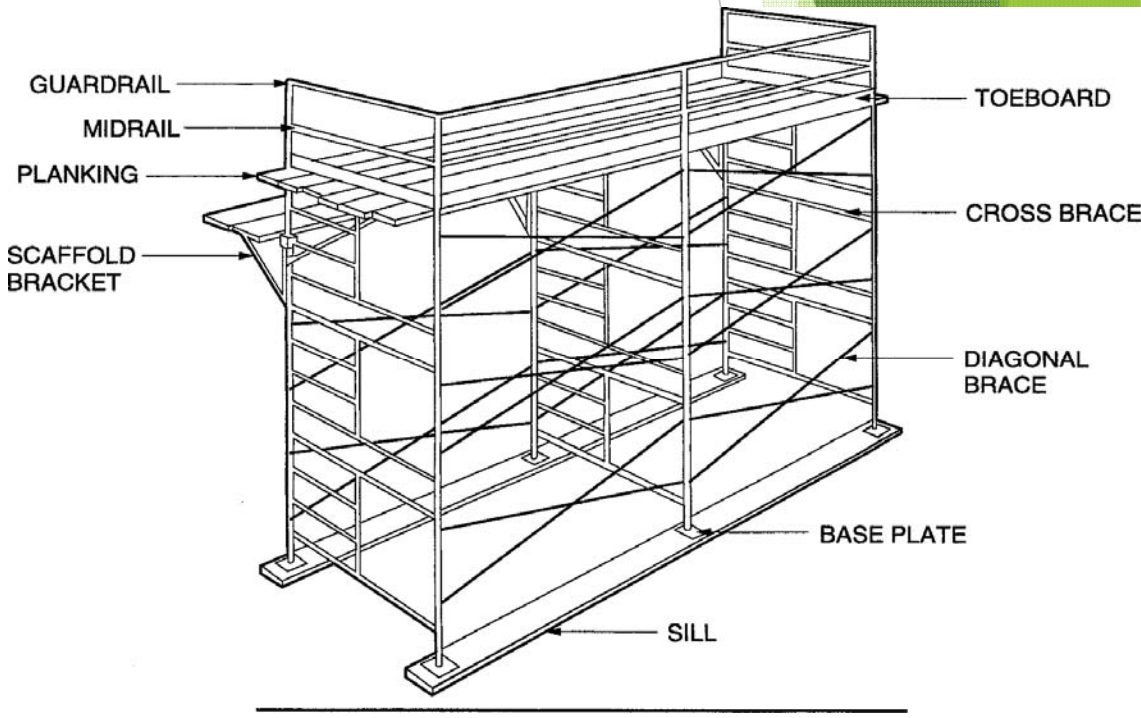
Scaffolding

- Arnav Agarwal

What is Scaffolding ?

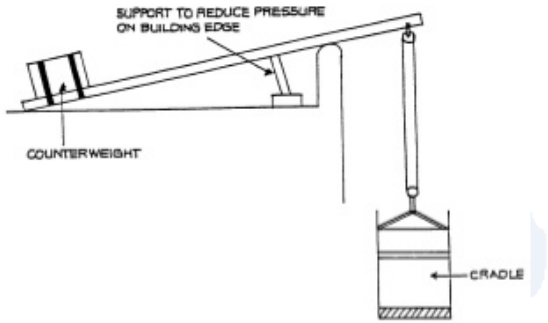
- A temporary elevated platform (supported or suspended) and it's supporting structure (including points of anchorage), used for supporting employees or materials or both.
- Components of Scaffolding:
  - Foundation
  - Ledger and Standard
  - Internal bracing
  - Working Platform
  - Safety features



Commons Types of Scaffolding

- Supported

- Suspended



- Mobile

- Airlifter

Facts

- In United States, nearly 6.5 million people work at approximately 252,000 construction sites on any given day.
- An estimated 2.3 million construction workers, or 65 percent of the construction industry, work on scaffolds.
- According to OSHA, 9% of the fatalities in the construction industry each year are related to scaffold use.
- Scaffold-related accidents account for 4,500 injuries and over 60 deaths every year. (Bureau of Labor Statistics)

Who is at Risk ?

- Scaffold erectors and dismantlers
- Personnel working on scaffolds
- Employees and the general public near scaffolding.

Major Reasons for Accident

- Workers falling
  - Inadequate fall protection
  - Environmental conditions (cold and ice, rain, wind, presence of toxic gases, etc.)
  - Inadequate work rules.
  - Planks giving way
- Scaffold Collapse
  - Improper scaffolding construction or operating procedures
  - Scaffolding failures at attachment points
  - Parts failure, including from overloading of scaffolding
- Falling material
  - Incomplete Guards
  - Overloading of scaffolding.

Root causes resulting in accidents

- Structural failure
- Deficient/ inefficient Barriers
- Directly related to person
- Overloading
- Poor scaffold access
- Miscellaneous

Scaffold Foundation

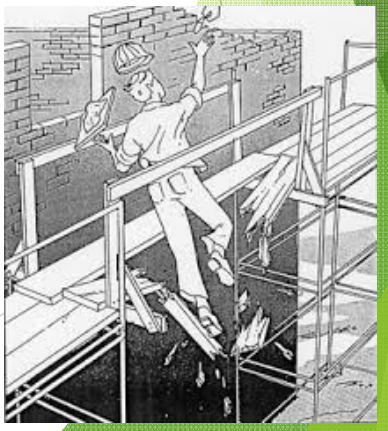
- Scaffold legs must be set on base plate and adequate mudsills
- Mudsills must be sized to distribute the load to ground or support structure

DONT's

- There is no base plate and scrap plywood is not adequate
- Scaffold should not be set over bricks or masonry blocks

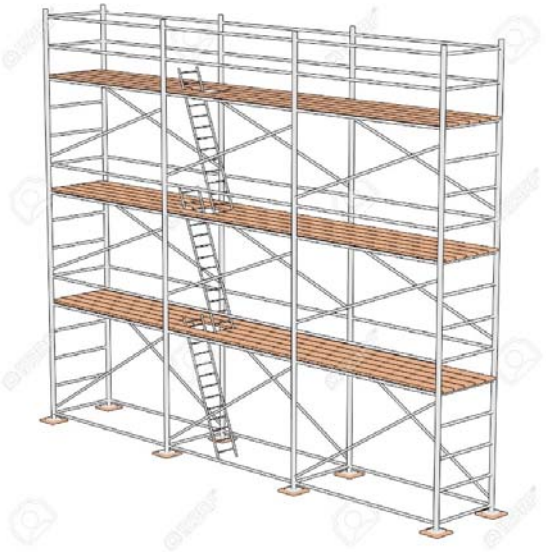
Working Platform

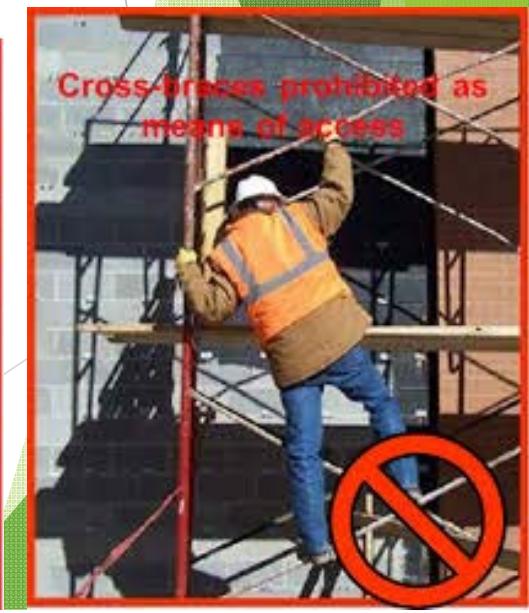
- Fully planked and decked.
- Platform and walkways at least 18” wide.
- No Paint.
- Each end of a platform 10 feet or less in length shall not extend over its support more than 12 inches.
- All planks running on a scaffold should have a minimum overlap of 12 inches.
- Planks should not have defects like Bow, Twist, Crook and Cup.



Safe Access

- Employers must provide safe access when the scaffold platforms are more than 2 feet (0.6 meters) above or below a point of access.
- Ladders, such as portable, hook-on, attachable, and stairway. Stair towers, Ramps and walkways, and Integral prefabricated frames may be used to access.





Fall protection

- 10 foot trigger height for fall protection on scaffolds
- Guardrails
- Personal Fall Arrest System

Never Overload

Administrative Controls

- **Appointing a Competent Authority**
  - Supervises Erecting and Dismantling
  - Inspect scaffolding and components prior to each work shift
  - To determine if it is safe for employees to work on or from a scaffold during storms or high winds.

- **Employees must receive training from qualified person that covers**
  - Nature of hazards, electrical, falls, and falling items
  - Use of scaffold / handling
  - Intended load and load carrying capabilities of scaffold
  - Procedures for setup, dismantling or moving the system
  - Retraining

Individual Check

- Work under the supervision of a licensed scaffolder.
- Always check the last inspection date on the “Inspection tag”, the date should be no longer than 7 days.
- Ensure that safe working load is not exceeded.
- If you detect any faults, immediately report to the concerned officer.