Scaffolds

• Scaffolds are temporary work platforms erected so workers can safely do elevated work

• Scaffolds allow workers to perform jobs that
  – Require elevation
  – Take a long time
  – Require both hands
  – Require more than one worker
Scaffolding Hazards

• In 2009
  – 54 workers died from scaffold accidents
  – 72% of workers injured in scaffold accidents because of
    o Planking or support giving way
    o Slipping
    o Being struck by a falling object

• In 2012, 3,650 workers were injured from scaffolds
Scaffold Hazards

Four major scaffolding hazards

1. Electrical hazards
   - Working near energized or exposed electrical lines
   - Using electrical power tools and welding equipment

2. Fall hazards

3. Falling objects

4. Scaffold instability or collapse
General Requirements for Scaffolds

• Footing and anchorage of scaffolds must be
  – Sound
  – Rigid
  – Capable of carrying the maximum intended load without settling or displacement

• Do not use unstable objects to support scaffolds
  – Barrels
  – Boxes
  – Loose bricks
  – Concrete blocks
General Requirements for Scaffolds

• Scaffolds and their components should be capable of supporting, without failure, at least four times the maximum intended load
• Maintain scaffolds in a safe condition
• Do not alter or move scaffolds horizontally while they are occupied
• Nuts and bolts used for construction of scaffolds must be adequate size and used in sufficient numbers to develop the designed strength
General Requirements for Scaffolds

• Planking and platforms must be overlapped at least 12 inches or secured from movement
• Safe access must be provided
• Scaffold planks must extend over end supports between 6-18 inches
• Poles, legs, and uprights must be plumb and securely and rigidly braced to prevent swaying and displacement
• Materials being hoisted onto a scaffold must have a tagline
General Requirements for Scaffolds

• Overhead protection must be provided on a scaffold exposed to overhead hazards

• Scaffolds must be provided with a screen between the toeboard and the guardrail, extending along the entire opening

• Tools, materials, and debris are not allowed to gather in quantities to cause a hazard
General Requirements for Scaffolds

• Only use treated or protected rope when working with corrosive substances or chemicals

• Wire and fiber rope used for suspension must be capable of supporting at least 6 times the intended load

• When using acid solutions for cleaning structures over 50 feet in height, wire rope supported scaffolds must be used
General Requirements for Scaffolds

• Scaffolds must be secured to permanent structures through use of anchor bolts, reveal bolts, or other equivalent means

• Protect scaffold parts when using heat-producing processes

• Scaffolds cannot be taller than 4 times the smallest dimension of the base
Scaffolding Inspection

• A qualified worker must inspect scaffolds for
  – Damage
  – Deterioration
  – Missing parts

• Scaffolds must be inspected
  – Before you are allowed to use them
  – Before each shift
  – After any occurrence that may affect the stability or safe use of the scaffolding
Scaffolding Inspection

The inspector should check that

• Risers and braces are securely fastened with the locking mechanism properly engaged
• Diagonal cross braces are provided according to design specifications
• Handrails and toeboards are installed on all open ends and sides of scaffolding greater than 10 feet high
• Caged ladders or stairways are provided for entry
Very Tall Scaffolds

Scaffolds higher than 4 times the smallest dimension of the base

- Use tying to secure scaffolds to tall structures to prevent swaying or displacement
- Scaffolds must be tied at least
  - Every 30 feet horizontally
  - Every 26 feet vertically
- Use guying whenever tall scaffolds cannot be secured to an adjacent structure
  - Guying must be designed by a competent engineer
Wheeled Scaffolds

• Wheeled scaffolds can only be used on smooth, firm, and level surfaces

• You are only allowed on the scaffold when it is stationary

• Never ride a wheeled scaffold
Safe Work Practices

• Employees must not work on scaffolds during storms or high winds

• Employees must not work on scaffolds covered with ice or snow
  – All ice or snow must be removed and planking sanded to prevent slipping

• Do not mix components from different scaffolding systems
  – A hybrid scaffold may not be able to bear the desired weight
Safe Work Practices

• Shore scaffolds and lean-to scaffolds are prohibited
• Window cleaners’ anchor bolts must not be used to secure scaffold to permanent structures
• If electrical equipment is being used on scaffolding
  – Ground to reduce risk of injury
  – Keep scaffold and conductive materials at least 10 feet away from overhead power lines
Safe Work Practices

• Do not stand on boxes, crates, or barrels, or use ladders to increase working height

• Wear overhead protection when you may be exposed to overhead hazards

• Use scaffolds only for their intended use
Safe Work Practices

- Use taglines to hoist material onto a scaffold
- Wear appropriate PPE
- Keep scaffold work areas and walkways neat
- Wear personal fall arrest equipment when needed
Safe Work Practices

• Always use a ladder or stairs to access the upper work surface of a scaffold

• Never climb on the
  - Handrail
  - Mid-rail
  - Cross-braces
  - Braces of the scaffold system

• When using stairs
  - Keep hands free
  - Use the handrails