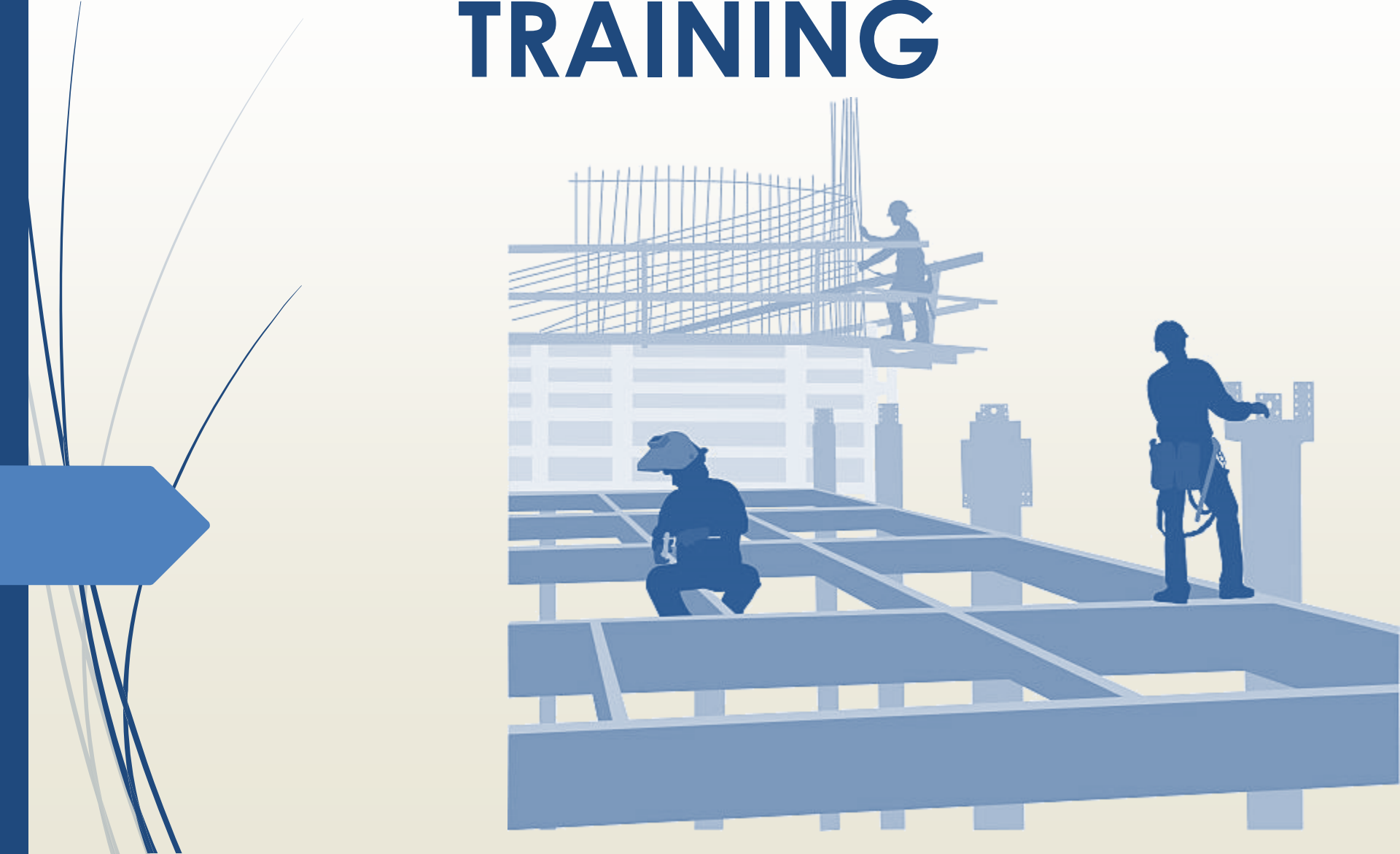# WORK AT HEIGHT TRAINING

Agenda

Aim and Objective

Work at Height Hazards

Work at height Safe Practices

Ladders Hazards

Ladders use tips & Safe Practices

Scaffolding Hazards

Safe Practices of Scaffolding

Questions

Quiz

Aim / Objectives

- The Aim of the training session is to understand and Identify the factors that contribute to persons and objects falling from height. Describe the control measures to reduce the risk of falls from height. Understand the proper use of ladder and scaffolding and its equipment and safe methods of access to reduce or eliminate the risk of falls.

Work At Height

- Work at height is work in any place, including a place at, above or below ground level, where a person could be injured if fell from that place.

Work At Height - Hazards

- Over-reaching

- Unguarded holes in floors

- Failure of the elevated work platform (Collapse, overturn, etc.)

- Poor edge protection

- Work in areas without guard rails or covers.

- Falling object

Work At Height – Safe Practices

01 **Avoid working at height completely**
Where possible, use a plant equipment at ground level rather than a roof, or change the equipment altogether.

02 **Prevent falls using collective equipment**
Install a permanent system that offers a passive solution for multiple workers, such as a physical barrier.

03 **Use personal protective equipment (PPE): Fall restraint**
Fall restraint systems usually include an anchor point and lanyard which prevent workers from reaching a hazard

Work At Height – Safe Practices

04

Minimize risk by undergoing training
Training should focus on safe working practices, as well as on the correct use of relevant equipment.

05

Minimize the impact of a fall
If a fall cannot be avoided, then use collective equipment, such as airbags and net to reduce the impact of the fall.
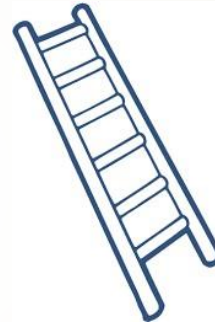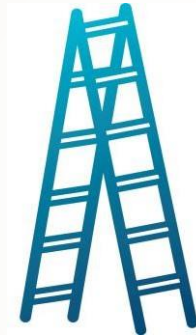
06

Use PPE (Fall arrest)
Fall arrest systems should only be used as a last resort and you will need to undergo training to use these. If a worker falls, fall arrest equipment stops the fall before he hits the surface.

Ladders Types

- Step Ladder
- Steps Stool
- Straight Ladders
- Platform Ladders
- Extension Ladders
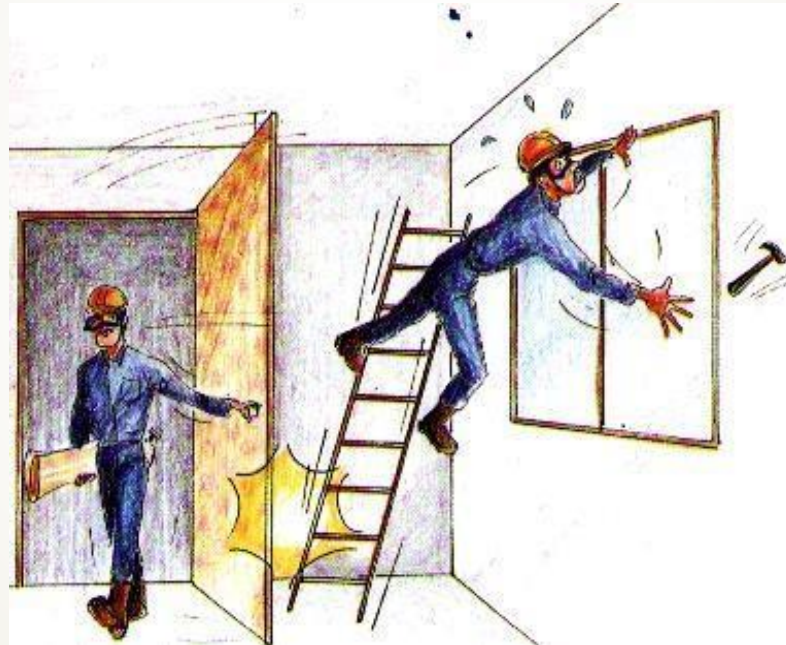- Folding Ladders
- Multipurpose Ladder

Ladders Hazards

- Falls to lower level as a result of tip overs
- Falls from ladder losing footing after insecure ladder
- placement
- Collapse of ladder from damaged spreader
- Falls from losing grip whi............g
- Exposure to electricity

LADDERS – Tips and Safe Practices

1

Never Position ladder in front of opening door

LADDERS – Tips and Safe Practices

2

Never Put ladder on the top of boxes, loose bricks, or concrete blocks to gain extra height
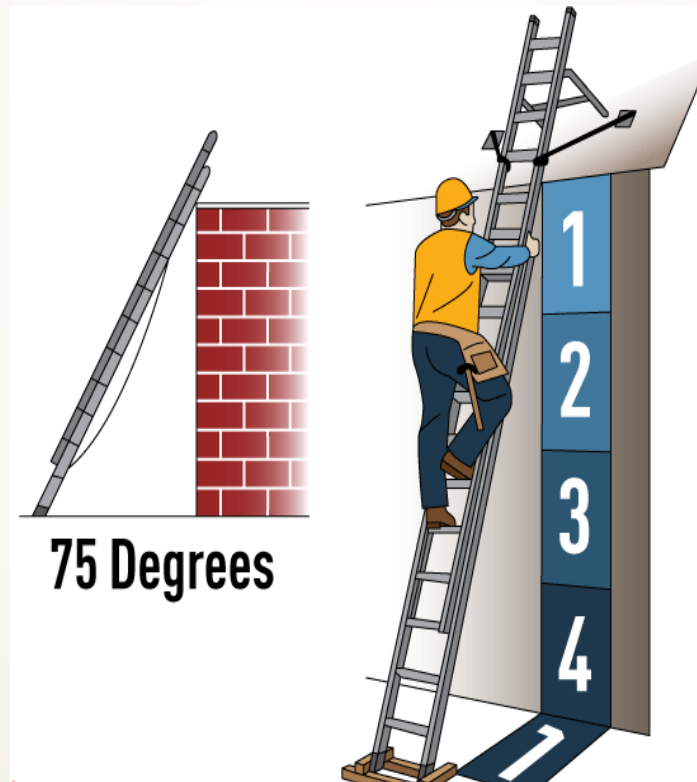
3

Maintain 3 Points of contact over ladders
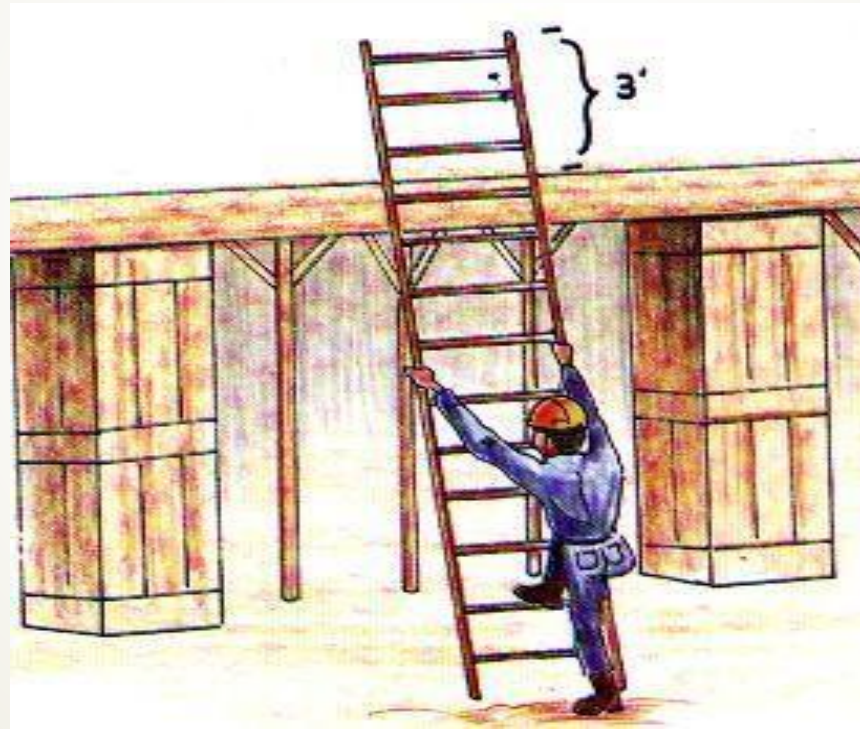
LADDERS – Tips and Safe Practices

4

Ensure erection of ladder at (75° angle / 4:1) Ratio)

LADDERS – Tips and Safe Practices

5 The end of the ladder must extends at least 1 meter (3 Ft.) past the landing platform or step off point.

LADDERS – Tips and Safe Practices

6

Avoid overreaching while using ladders

Hot Works

Inspect ladder before use
for the following

1 — Loose or bent tie rod

2 — Even spacing between stiles

3 — Loose or missing tie rod ends

4 — Loose rungs

5 — 300mm spacing

6 — Stile twisted or bowed

7 — Worn or missing slip resistant feet
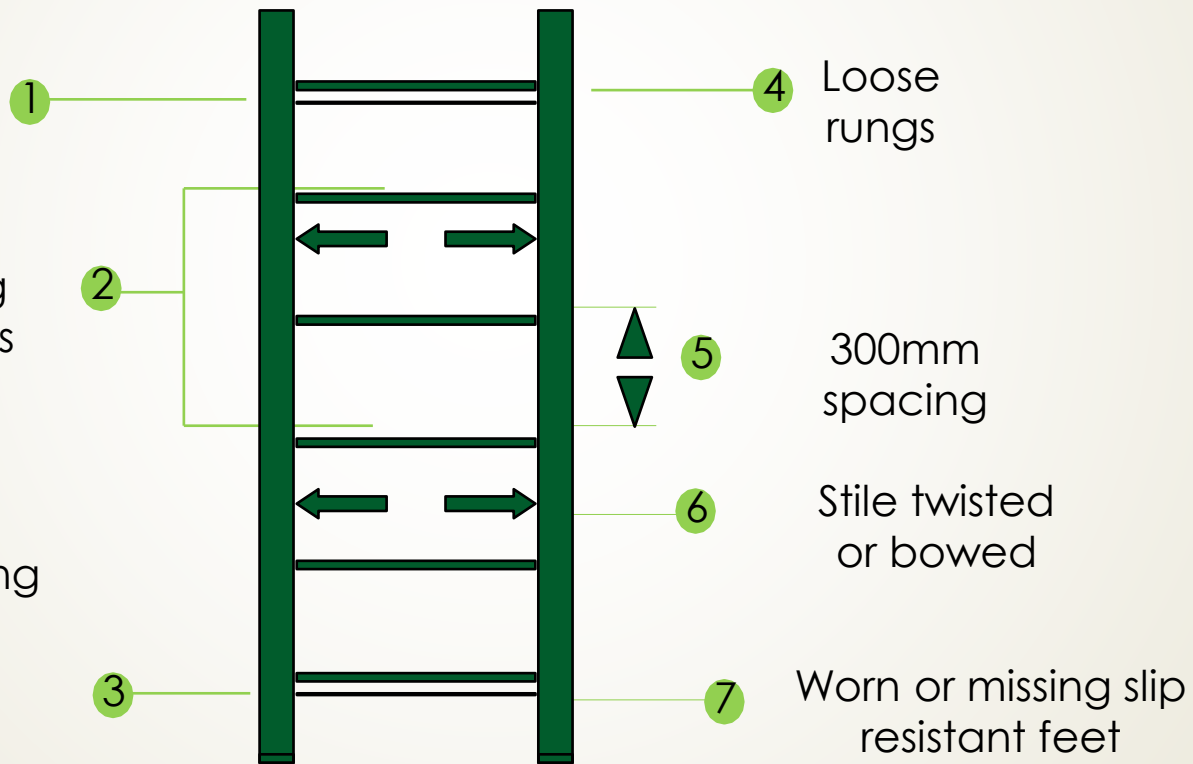
General Safety Tips for using ladders

1. Never use ladder as a bridge

2. Always face the ladder

3. Hold the uprights not the steps

4. Never carry tools in hand while usin...

5. Never use the top step of any ladd...

6. Never place tools on a step of ladd...

7. Only one person at a time

General Safety Tips for using ladders

8 ▸ Correct type of ladder for the job

9 ▸ Place ladder on a stable flat surfaces

10 ▸ Make sure that ladder has slip resistant fe...

11 ▸ Never work alone on straight ladders

12 ▸ Never use metal ladder near to energized electricity

13 ▸ Keep your center of gravity inside the ladder rails all the t...
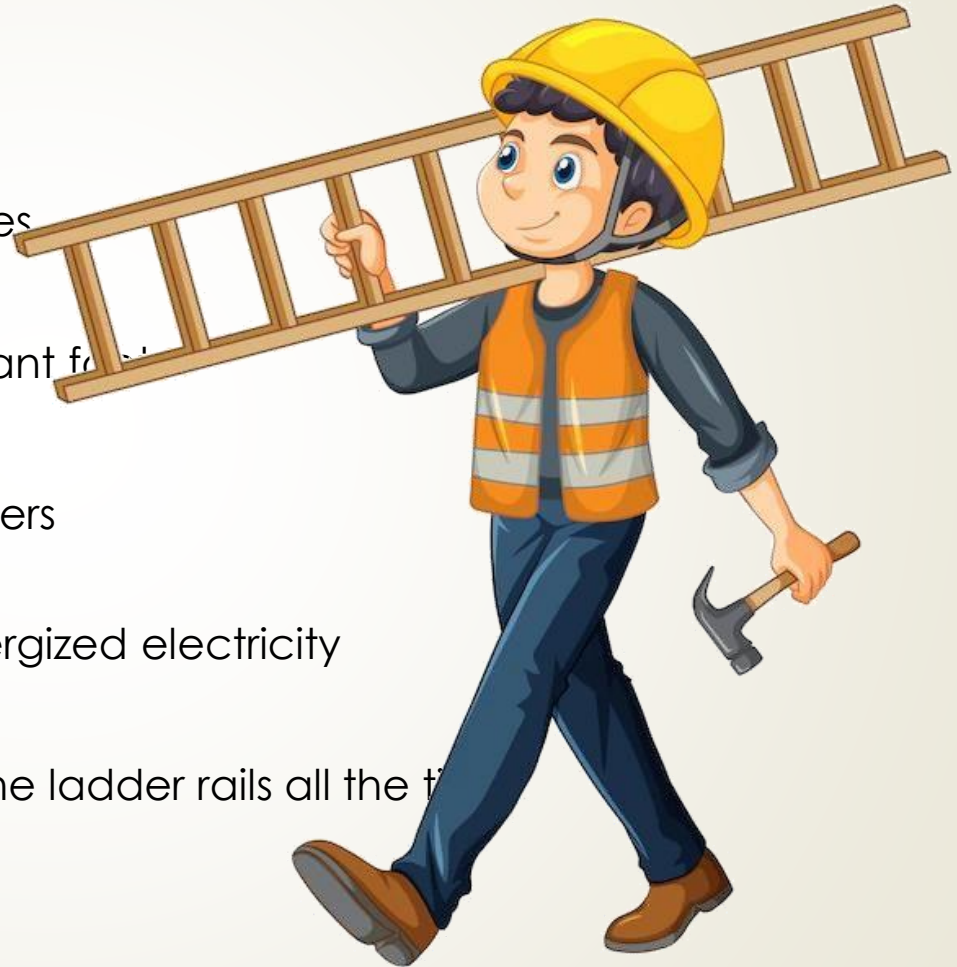
Scaffolding

An elevated, temporary work platform

Three basic types:

- ❑ **Supported scaffolds** -- platforms supported by rigid, load bearing members, such as poles, legs, frames, & outriggers
- ❑ **Suspended scaffolds** -- platforms suspended by ropes or other non-rigid, overhead support
- ❑ **Aerial Lifts** -- such as "cherry pickers" or "boom trucks"

Scaffolding Types

- Portable/Mobile Scaffold
- Cantilever Scaffold
- Tower Scaffold
- Suspended scaffold
- Ladder or Trestle Scaffolding
- System Scaffolding

Scaffolding Erection

- ❑ Scaffolds can only be erected, moved, dismantled or altered under the supervision of a competent person

- ❑ Competent person selects & directs these workers and determines the feasibility of fall protection

21

Scaffolding Hazards

- Falls
- Being Struck by falling equipment
- Contact with energized power line
- Scaffolding Collapse
- Overloading
- Weather
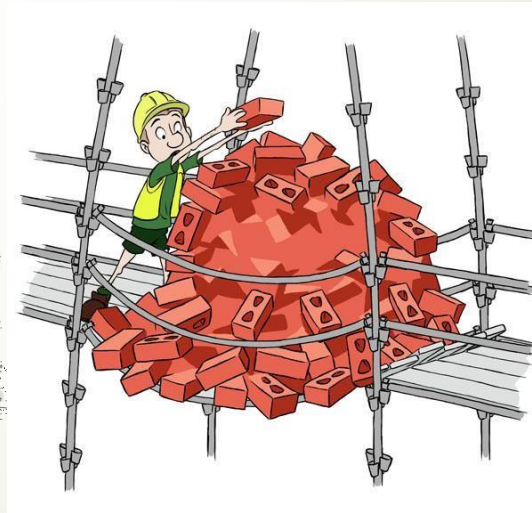
Scaffolding Main Components

1

Post is vertical tube that carries the weight of the scaffold.

2

Runner is a horizontal scaffold tube that extends from post to post and supports the bearers.

3

Bearers are Horizontal tube fixed on top of at least 2 runners (at or near a pair of posts) & supports the weight of planks.

Scaffolding Main Components

4

Board Bearer is like a bearer, but not fixed to the posts. It helps the support planks at mid-span.

5

Planks are long wood boards that are laid across the sections of scaffolding to provide workers with a place to stand and to work from.
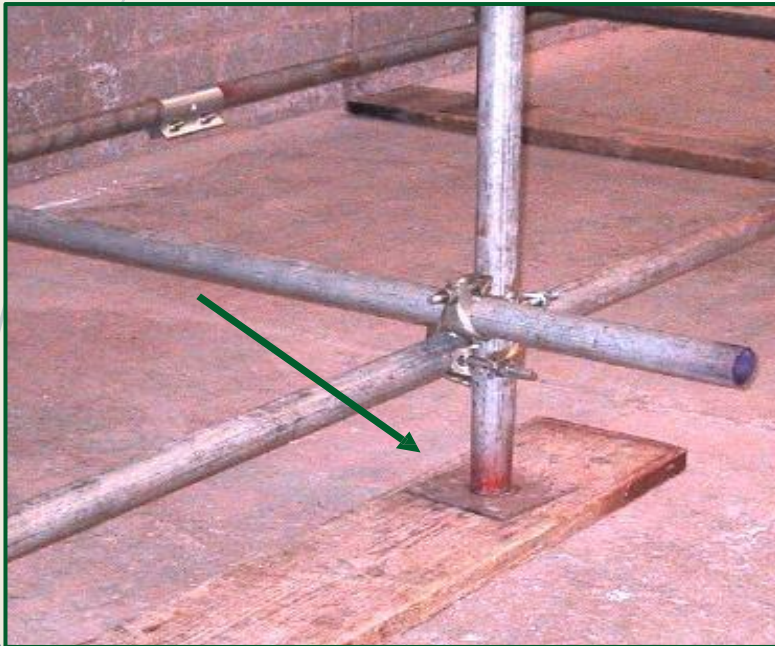
Scaffolding Main Components

6
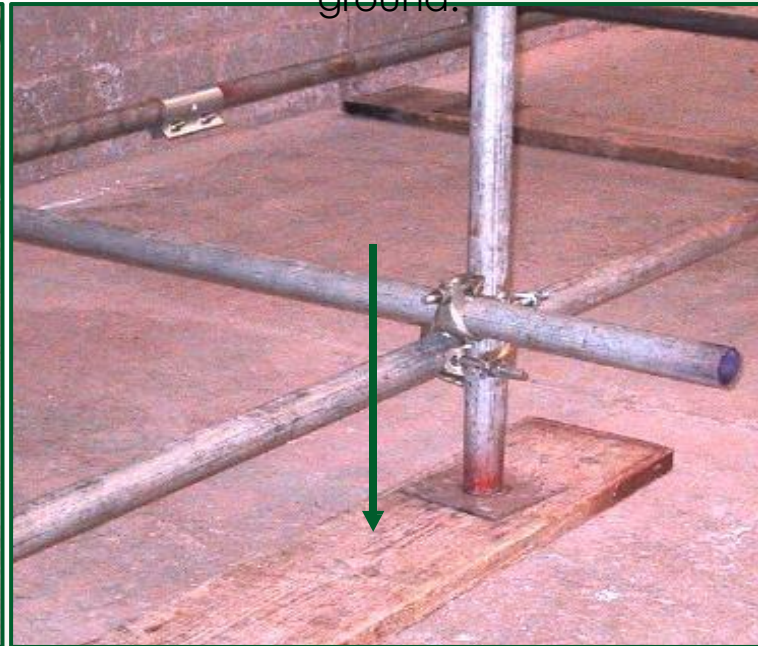
Base Plate - A steel plate measuring 6" by 6" used for distributing the load from the post.

7

Sole Board - A board that measures 9" by 1 ½ " thick lumber used to distribute weight from base plate to ground.

Scaffolding Main Components
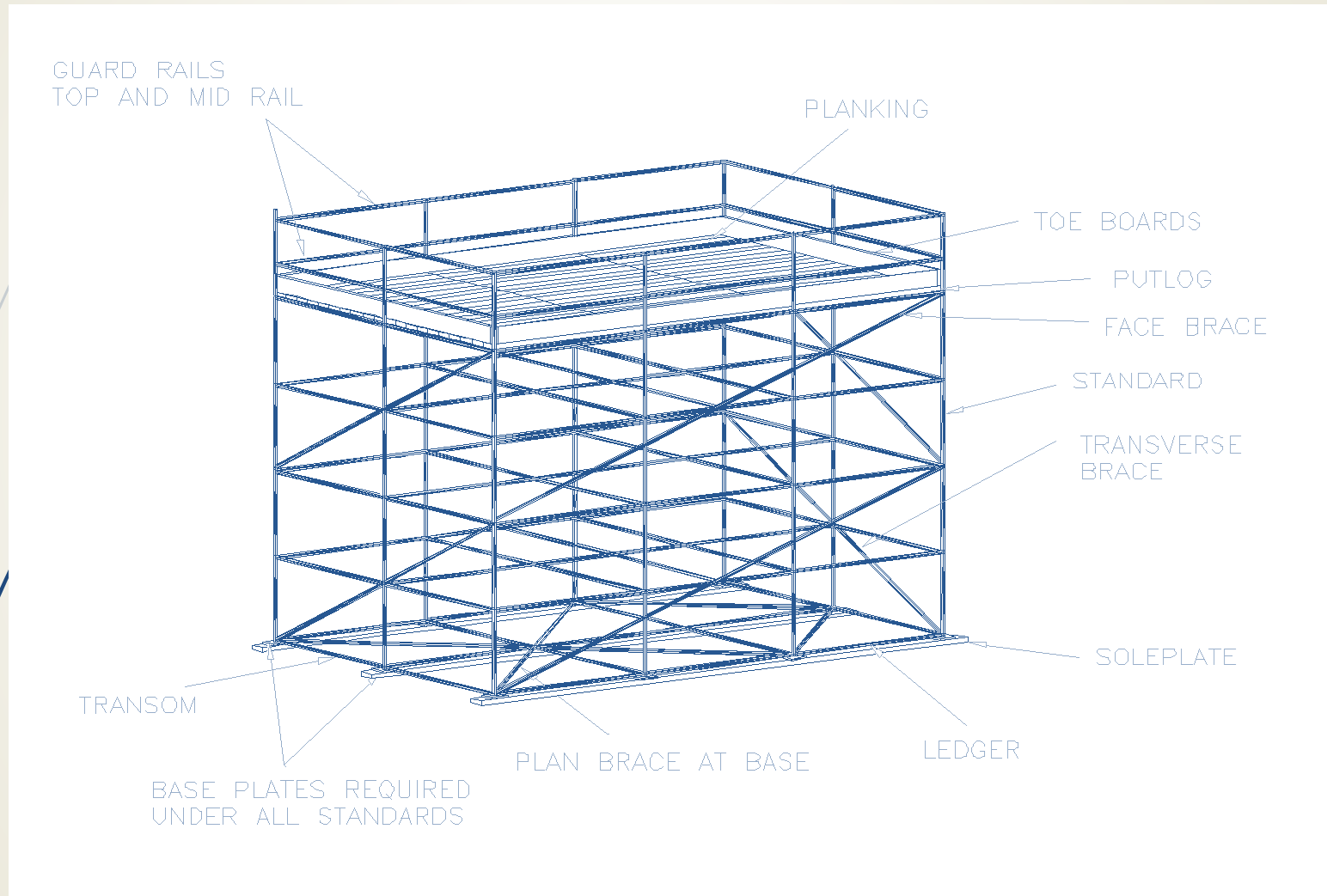
SCAFFOLDING – Guardrail System

Guardrail System Is use prevent the workers from falling off the platform

1

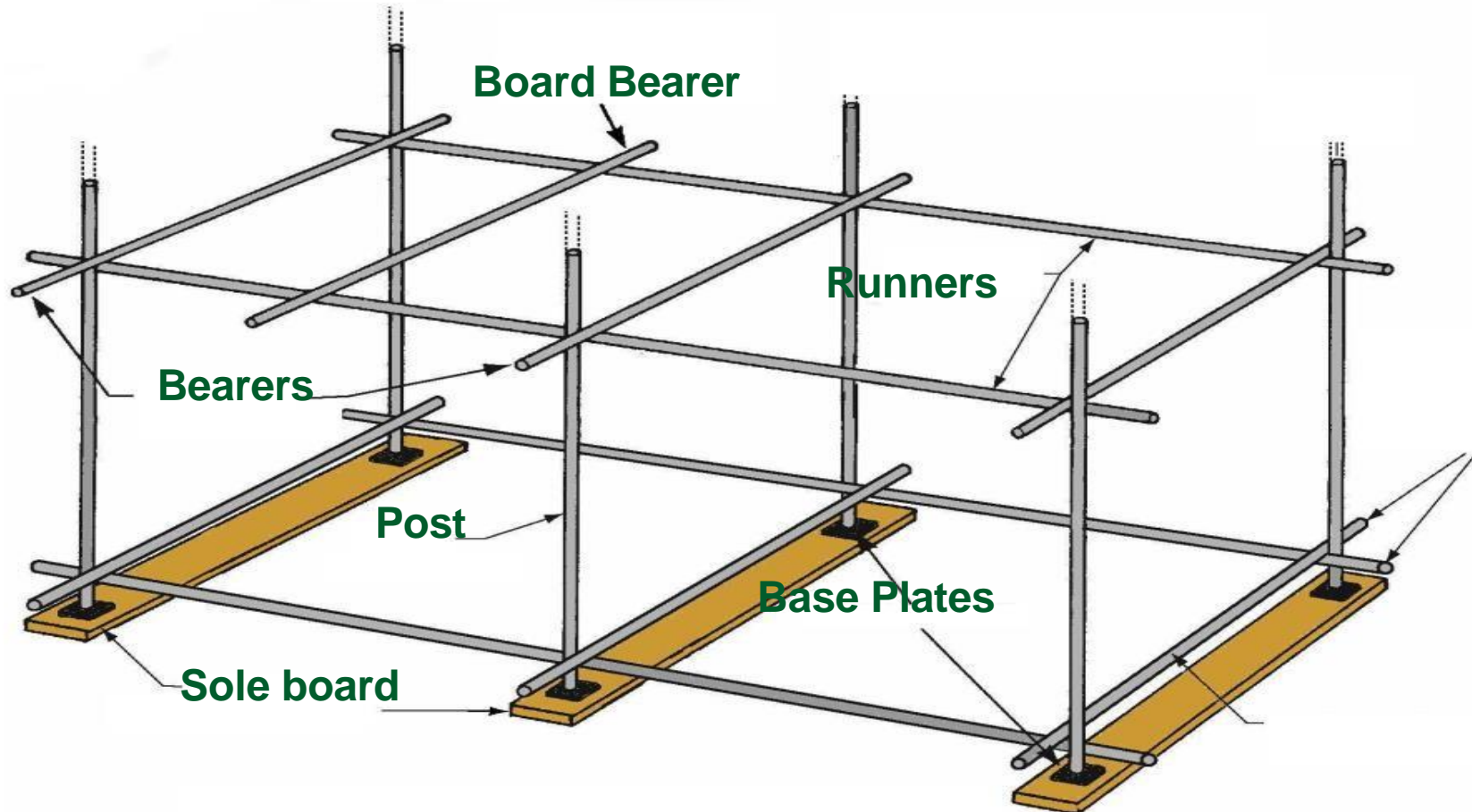Top-rail - Installed between 38"- 45"platform

2

Mid-rail - Installed between top-rail & platform

3

Toe-boards Are required to prevent objects from falling onto workers below the platform.

SCAFFOLDING – Basic Structure

Board Bearer

Runners

Bearers

Post

Base Plates

Sole board

SCAFFOLDING – Safe Practices

All scaffolds over four feet in height must have some form of fall protection. Three types of fall protection can be used on scaffolds personal fall arrest systems, safety nets, and guardrails.

All scaffold planks and decks must be made of sturdy material that can support the weight of the workers. The boards should also be free of cracks, knots, holes, and splinters.

Scaffolds must be placed on a stable base. The ground should be level and firm enough to support the weight of the scaffold and the workers.

Scaffolds must not be overloaded. This means that the scaffold should not be used to support more weight than it is designed for. The maximum load for a scaffold includes the weight of the workers, the materials, and the tools. Do not place materials on a scaffold if it will make the scaffold unstable.

All scaffold parts must be in good condition. This includes the base plates, cross braces, guardrails, and planking. Do not use a scaffold if any of these parts are missing or damaged. If you see a scaffold with missing or damaged parts, do not use it.

Ladders must be in good condition and properly secured to the scaffold. The rungs should be free of cracks, holes, or splinters. Do not use a ladder if any of these conditions are present.

Falling objects are a major hazard on scaffolds. Make sure that all materials are securely fastened to the scaffold before you start to work.

High winds can cause scaffolds to collapse. If the high wind is blowing (65Km/h) do not use the scaffold. Wait until the wind dies down before you start to work.

SCAFFOLDING – Tagging System

1	2	3
Red Tag Do not use scaffold	**Yellow Tag** Full body harness required	**Green Tag** Scaffold complete, no harness required

Training Requirement

❑ Train employees on scaffold hazards and procedures to control the hazards

❑ The training must include: Nature of electrical, fall, and falling object hazards

❑ How to deal with electrical hazards and fall protection systems

❑ Proper use of the scaffold

• Scaffold load capacities

• Retrain as necessary

Summary

Remember to:

Use appropriate scaffold construction methods
- ➢ Erect, move, or alter scaffold properly
- ➢ Protect from falling objects or tools

Ensure stable access

Use a competent person
- ➢ Train on scaffold construction and the hazards involved with scaffolds
- ➢ Inspect scaffold before each shift and after alterations
- ➢ Determine fall protection requirements

Quiz

Quiz

❑ _____ is work in any place, including a place at, above or below ground level, where a person could be injured if fell from that place.

❑ Write down 3 Work At Height – Hazards

❑ Write down 3 safe practices for Work At Height

❑ Write down 3 Ladders Hazards

❑ Write down 3 LADDERS – Tips and Safe Practices

❑ The end of the ladder must extends at least 0.5 meter past the landing platform or step off point- True/False

❑ Three point is contact is only applicable in ladder used inside oil and gas plant- True/False

Quiz

- ❑ Scaffolding can be Erected by any person under supervision of his line manager- True/False

- ❑ Write down 3 Scaffolding Hazards

- ❑ Write down 3 Scaffolding – Tips and Safe Practices

- ❑ What does Red Tag on scaffold stands for

- ❑ We need to wear safety harness only when working above 15ft height- True/False

- ❑ What is the purpose of Toe Board

- ❑ What is the purpose of guard rails

- ❑ Write down three components of scaffolding