

UNIT III - CONSTRUCTION PRACTICE - SUB STRUCTURE

Topic - 1 - Shoring

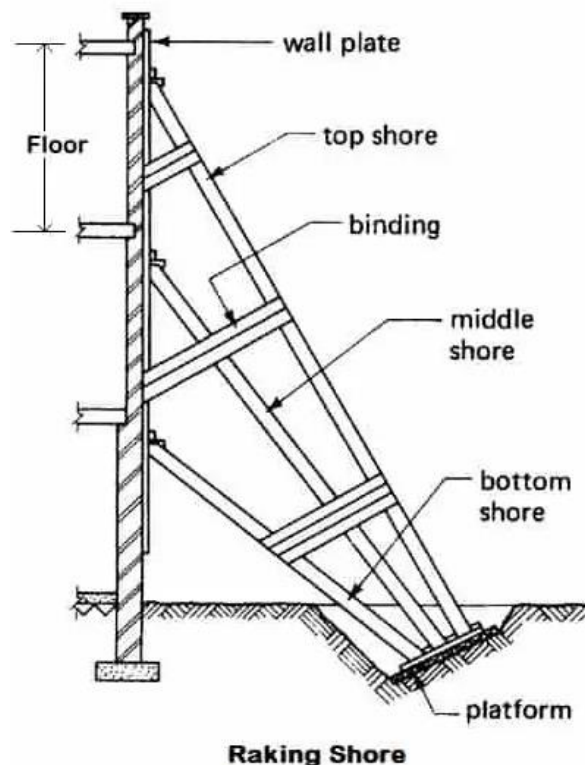
Shoring: Definition and Purpose

- **Shoring** refers to the process of supporting a building, structure, or trench with shores (props) when there is a danger of collapse or during repairs or alterations.
- It is primarily used in situations where a building or excavation is at risk of falling down due to structural instability.

Types of Shoring

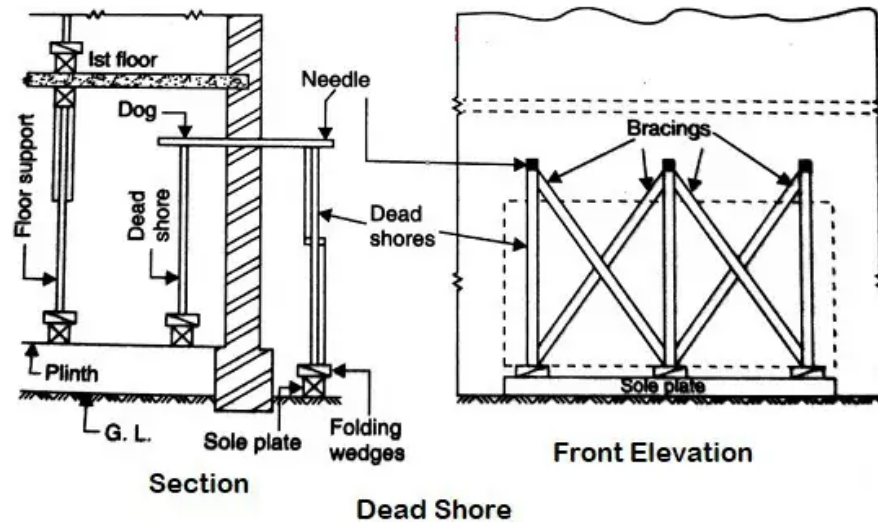
1. Raking Shoring (Inclined Shoring):

- Involves the use of inclined supports called rakers.
- Rakers are positioned to transfer the load from the wall to the ground.
- Suitable for taller walls and commonly used for large-scale support.



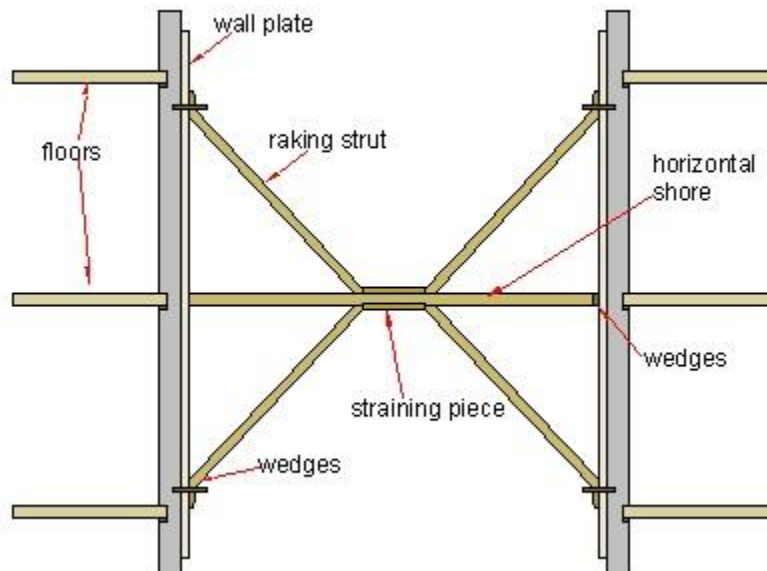
2. Dead Shoring (Vertical Shoring):

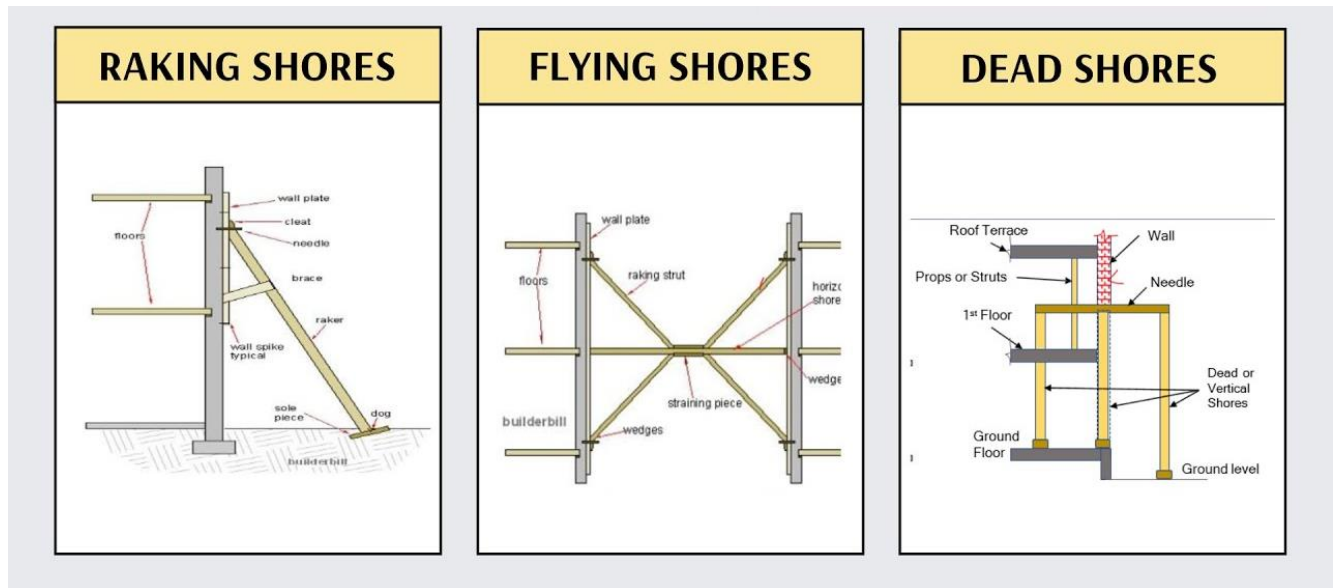
- Consists of vertical supports that carry the load directly from above.
- It is used to support walls, roofs, and floors temporarily during alterations or repairs.
- Commonly used when replacing or constructing load-bearing elements.



3. Flying Shoring:

- A horizontal support system used between two adjacent buildings.
- It stabilizes walls of nearby structures when there is an excavation or when a building between them is demolished.
- Designed to distribute the load between the two buildings effectively.





Applications of Shoring in Construction

- **Excavation Support:** To prevent soil collapse when digging deep foundations or trenches.
- **Building Repairs:** Provides temporary stability during the repair or renovation of structural elements.
- **Demolition:** Ensures neighboring buildings are not affected during the demolition of an adjoining structure.
- **Disaster Response:** Offers support in emergencies where structural stability is compromised.

Key Components of Shoring Systems

- **Shores (Props):** The main supporting elements that bear the load.
- **Sole Plates:** Distribute the weight of the shore onto the ground or foundation.
- **Needles:** Horizontal beams that transfer loads to the shores in specific applications.

Design Considerations for Shoring

- **Load Assessment:** Calculating the amount of force the shoring needs to support.
- **Material Strength:** Choosing the appropriate material (steel, timber, or aluminum) based on the load requirements.
- **Stability:** Ensuring the entire shoring system is stable and can withstand external pressures like wind or vibrations.

Safety Precautions

- Regular inspections for stability and integrity of the shoring.
- Ensuring proper anchorage of all supporting components.
- Adherence to construction safety standards and regulations.

Shoring is a crucial technique in construction to ensure stability and safety during excavation, demolition, and building repair processes. Proper planning, load analysis, and the selection of suitable materials are essential for effective shoring practices.