UNIT II
CONSTRUCTION PRACTICE - SUPER STRUCTURE

Topic 1 Brick Masonry

Introduction

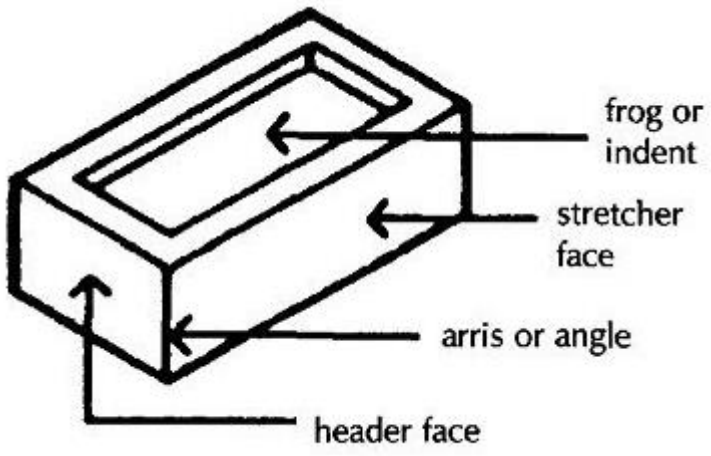
Brick masonry is one of the oldest forms of construction that uses bricks and mortar to build walls, foundations, and other structures. The quality of masonry depends on the quality of the bricks and mortar used, as well as the skill of the mason.

Types of Brick Masonry:

1. **Brick Work in Mud:**
   - Uses mud as the binding material.
   - Primarily used in rural areas or temporary structures.
2. **Brick Work in Cement or Lime Mortar:**
   - Most common in modern construction.
   - Provides greater strength and durability compared to mud mortar.

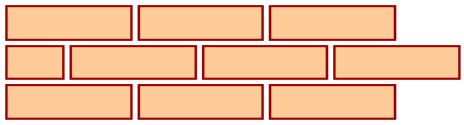
Important Terms:

- **Header:** A brick laid with its length perpendicular to the wall.
- **Stretcher:** A brick laid with its length parallel to the wall.



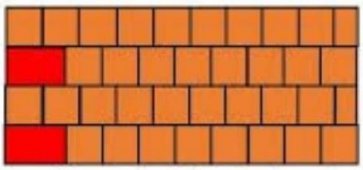
Different Types of Brick Bonds

1. **Stretcher Bond:**
   - Bricks are laid with their lengths (stretchers) parallel to the wall.
   - Common for half-brick thick walls, like partitions.



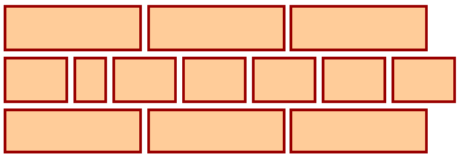
Stretcher bond

2. **Header Bond:**
   - Bricks are laid with their short ends (headers) facing the wall.
   - Used for walls that are one brick thick.



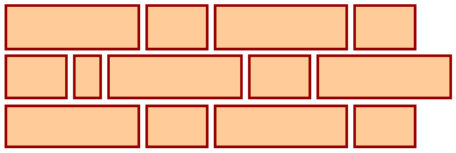
Header bond

3. **English Bond:**
   - Alternating courses of stretchers and headers.
   - Offers high strength and is used in load-bearing walls.



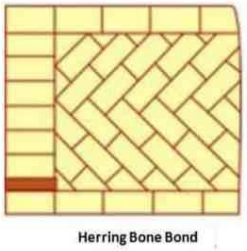
English bond

4. **Flemish Bond:**
   - Each course has alternate stretchers and headers.
   - Decorative but requires skilled work.

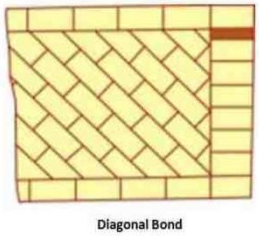


Flemish bond

5. **Herringbone Bond:**
    - Bricks are laid at 45-degree angles.
    - Common in paving and decorative masonry.



6. **Diagonal Bond:**
    - Bricks are laid diagonally across the wall face.
    - Used to reinforce thick walls.



7. **Dutch Bond:**
    - A variation of the English bond where alternate courses of headers are placed closer to the middle of the wall for extra strength.

Advantages of Brick Masonry:

- **Durability:** High resistance to weather and natural elements.
- **Fire Resistance:** Bricks are non-combustible and provide fire protection.
- **Cost-effective:** Readily available and relatively inexpensive.
- **Aesthetic Appeal:** Various finishes and bonds offer architectural versatility.

Disadvantages of Brick Masonry:

- **Time-consuming:** Construction with bricks takes longer than using modern materials like concrete blocks.
- **Requires skilled labor:** Incorrect brick placement can compromise the structure.

Applications:

- Walls and partitions
- Foundations
- Arches and vaults