



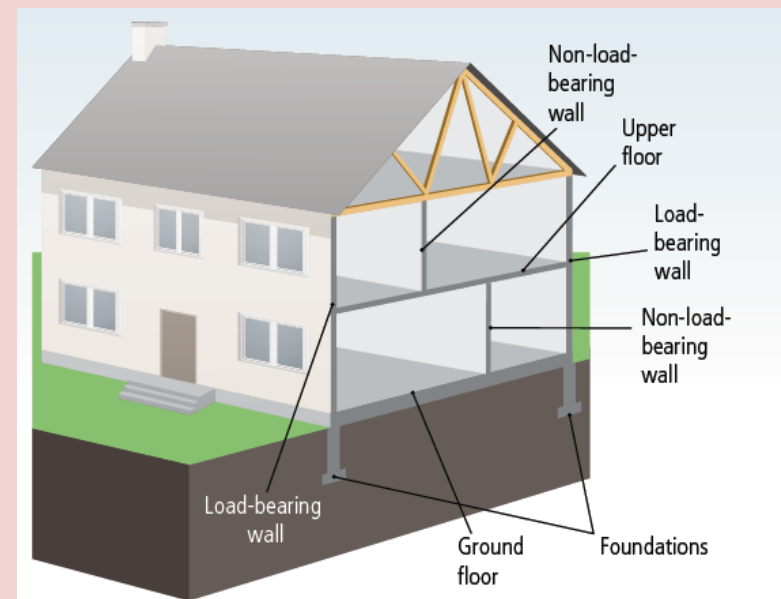
## CHAPTER 10

# WALLS AND PLASTERING



# Walls

- Solid vertical structures
  - Load-bearing walls
  - Non load-bearing walls
- Rising walls filled with concrete centre
  - Gives additional strength
  - Directs moisture out through external leaf



*Fig. 10.1 Load-bearing walls transmit the weight of the building down to the foundations. Non-load-bearing walls have no structural weight on them.*



# Load-Bearing Walls

- External load-bearing sits on foundations
- Provide moisture barrier
- Provide shelter from weather
- Some methods of cladding may be used
  - Slate
  - Aluminium
  - PVC
- Internal load-bearing also requires foundations



# Cavity Walls

- Parallel walls which rest on the same foundation
- Inner leaf main load-bearing
- Outer leaf load-bearing and weather proofing
- Advantages
  - Provides void for insulation
  - Does not allow transfer of moisture through capillary action

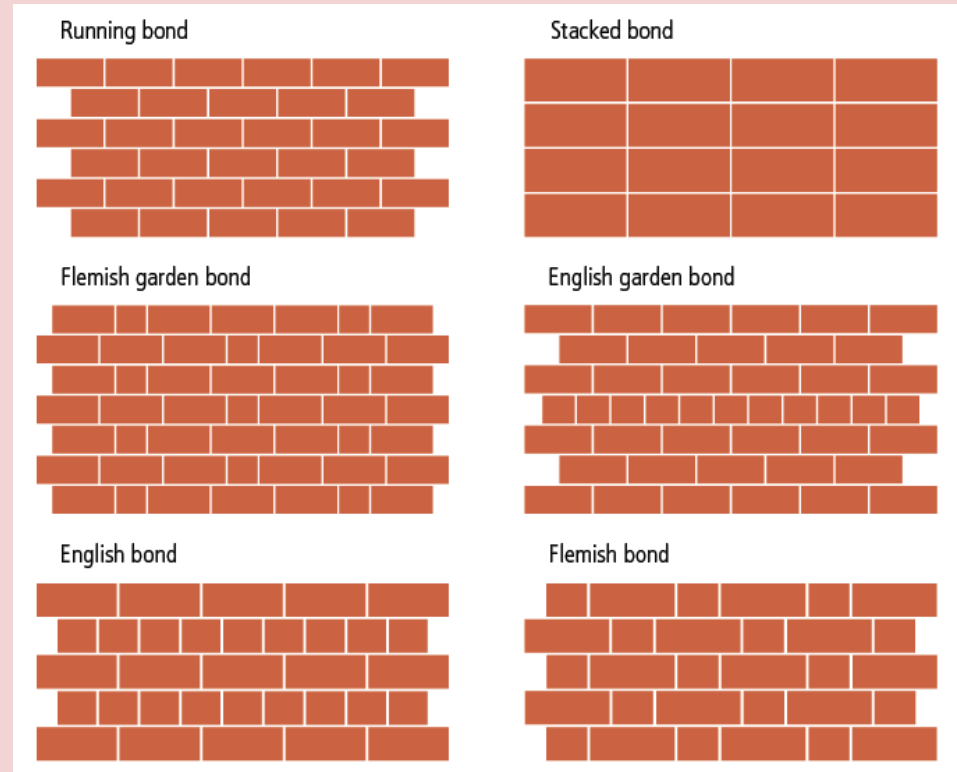


# Wall Bonding

Method of overlapping bricks or blocks

## Advantages

- Provides extra strength
- Decorative finish

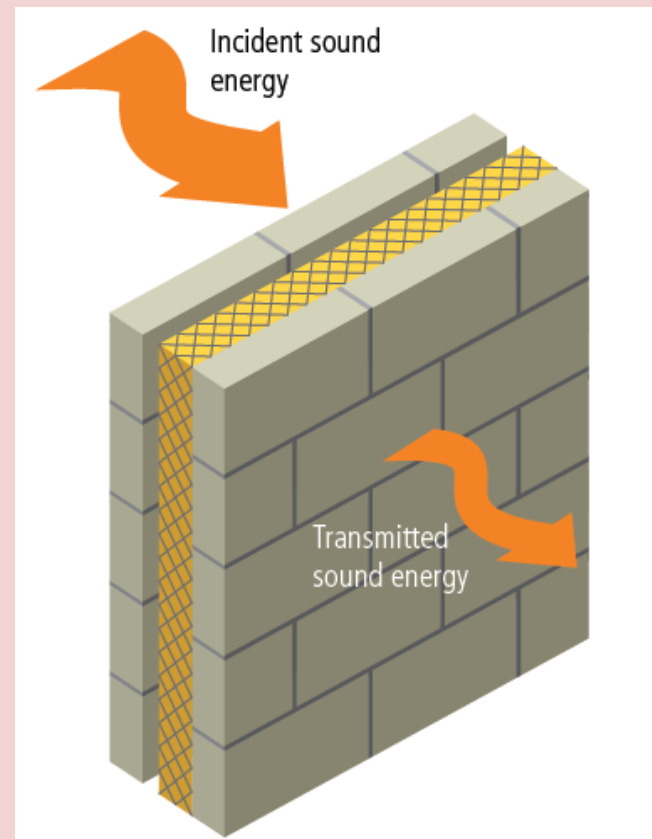


# Other Properties of Load-Bearing Walls

## Fire integrity

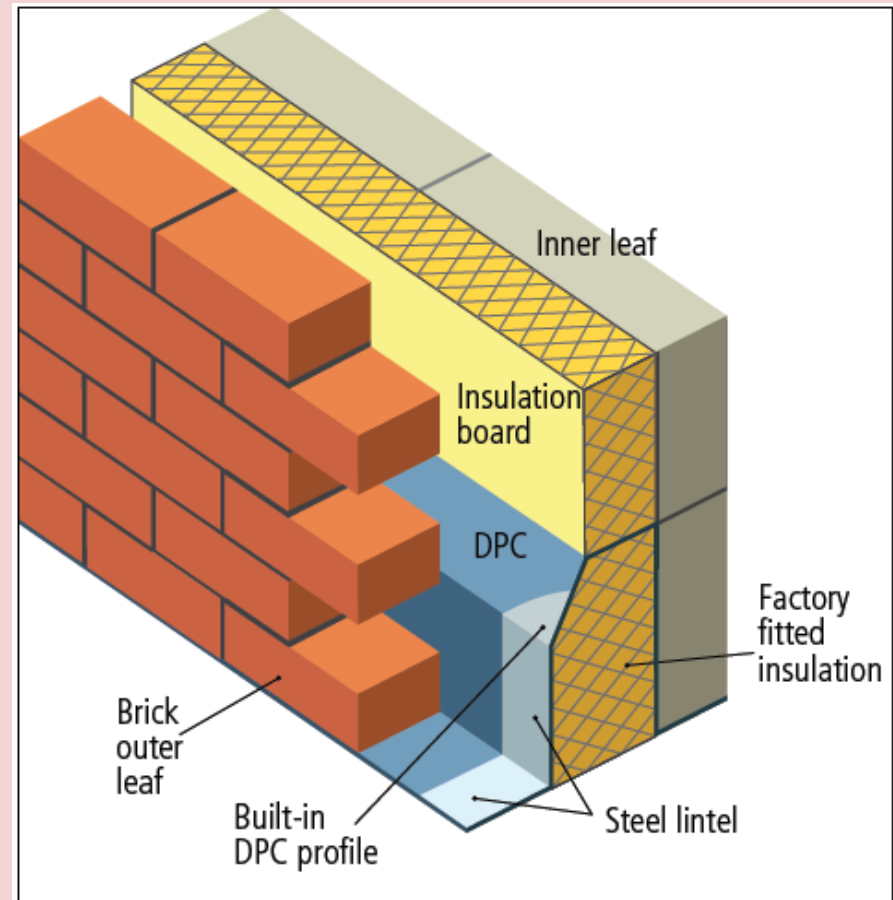
- Must be fire resistant
- Should remain stable in fire for at least 30 mins
  - Concrete is most common due to its fire resistance.
  - Timber frame must be treated.

## Sound transmission



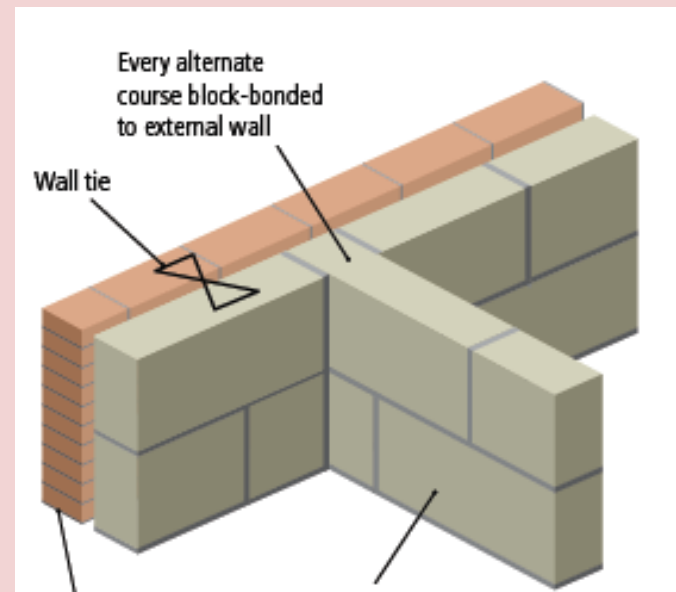
# Supporting Openings in a Wall

- For a wall to be stable all openings must be supported.
- Supports spread load across the opening.



# Internal Walls

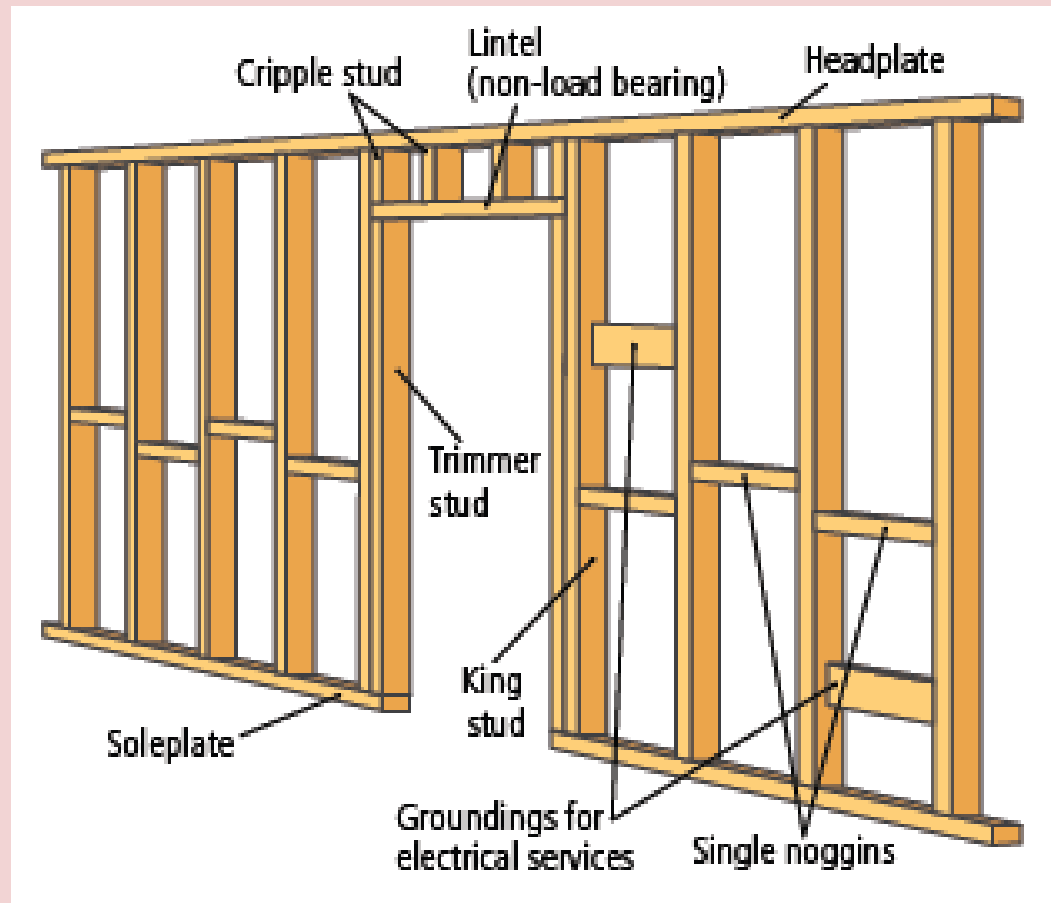
- Functions
  - Internal division
  - Resist fire spread
  - Accommodate services
  - Acoustic insulation
- Internal block walls
  - Bonded to external
  - Support for upper floors





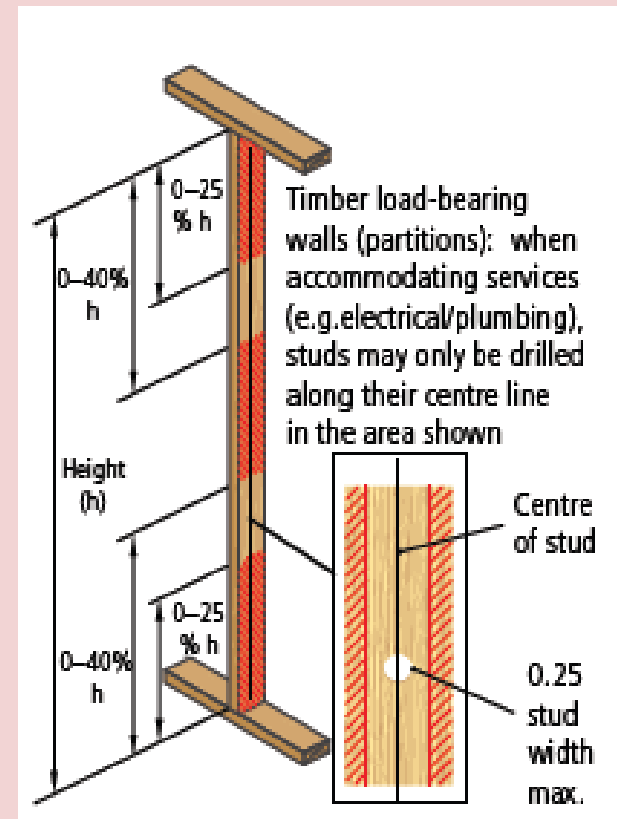
# Internal Walls

Internal  
timber walls



# Services Accommodation in Load-Bearing Timber Walls

Only along centre line  
in safe areas otherwise  
detrimental to  
integrity

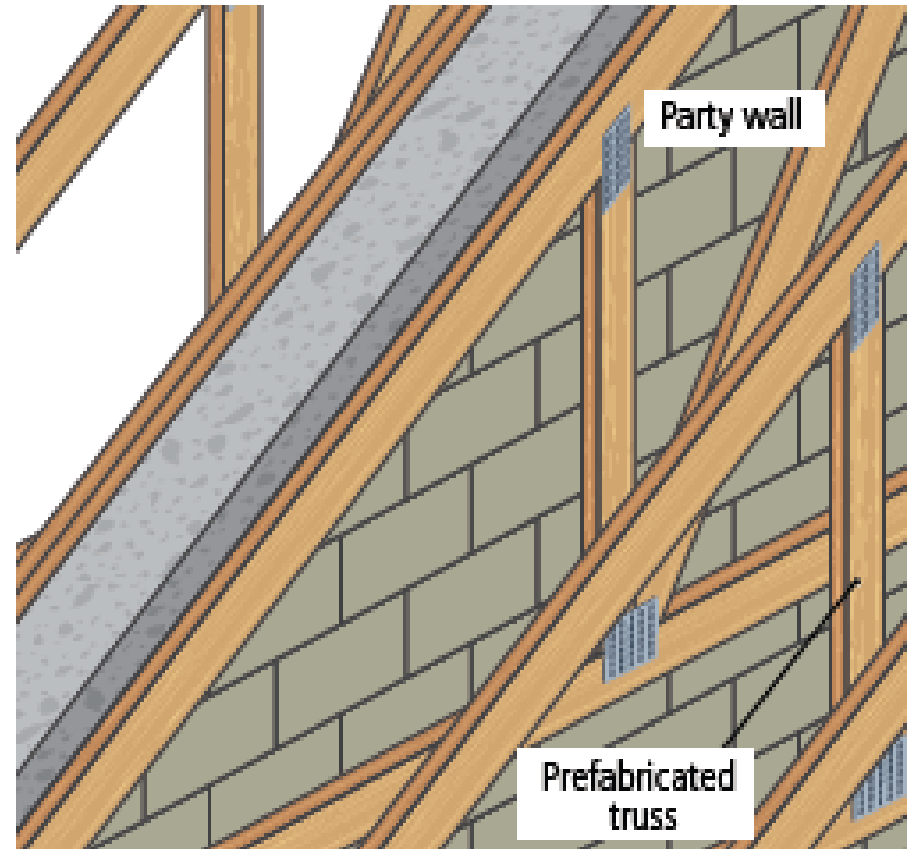
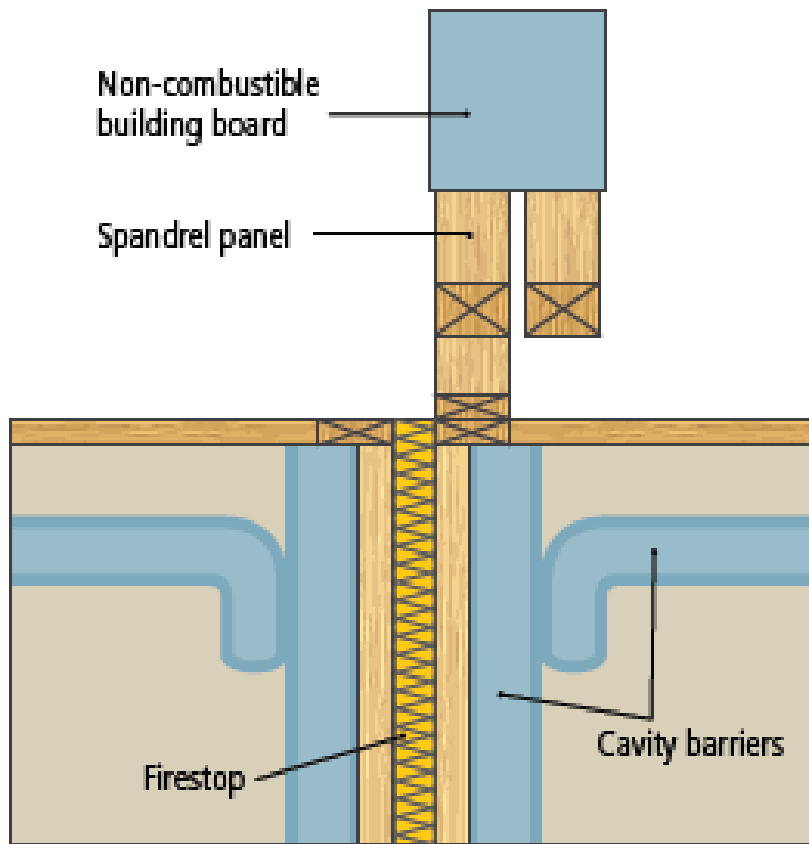


# Party Walls

- Divisional wall between houses
  - Prevents fire
  - Provides sound insulation
- Joists must not be built into walls. Joist hangers should be used.



# Party Wall Details



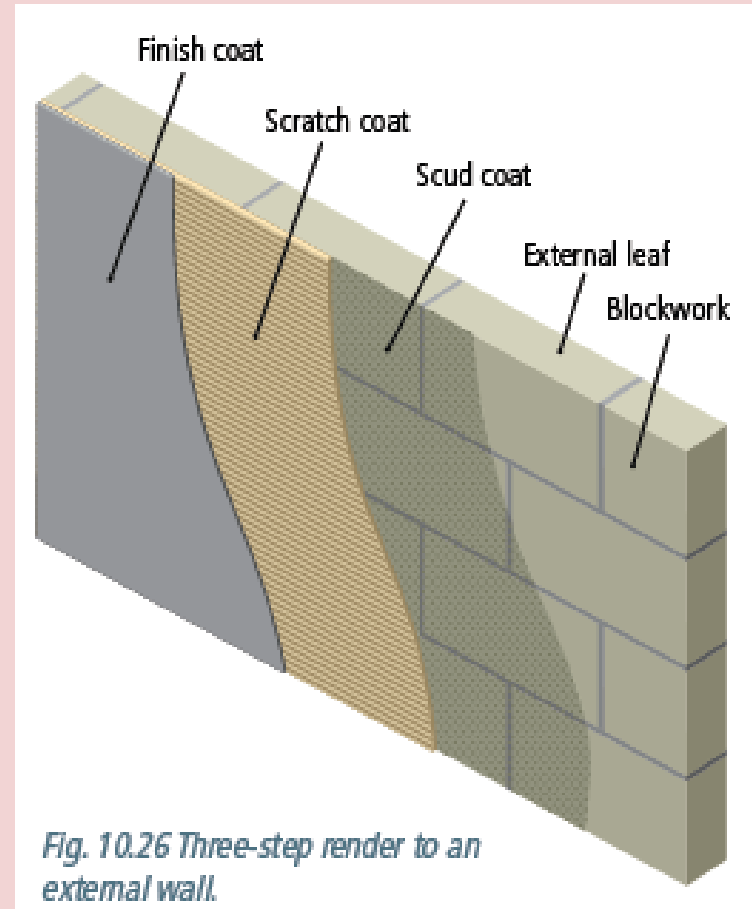
# Boundary Walls

- Enclose a property
- Provide privacy
- Can be:
  - Brick
  - Wood
  - Stone
  - Block with render

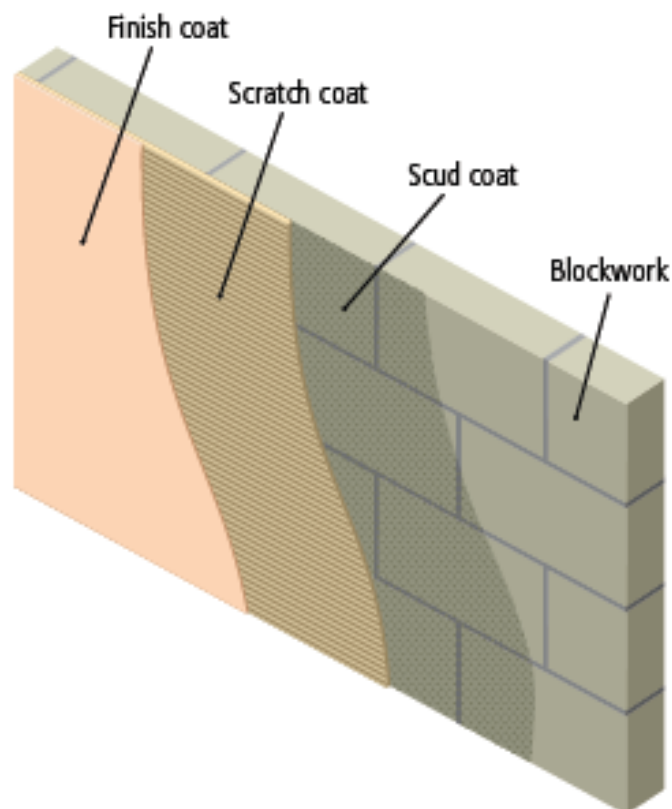


# Wall Finishing

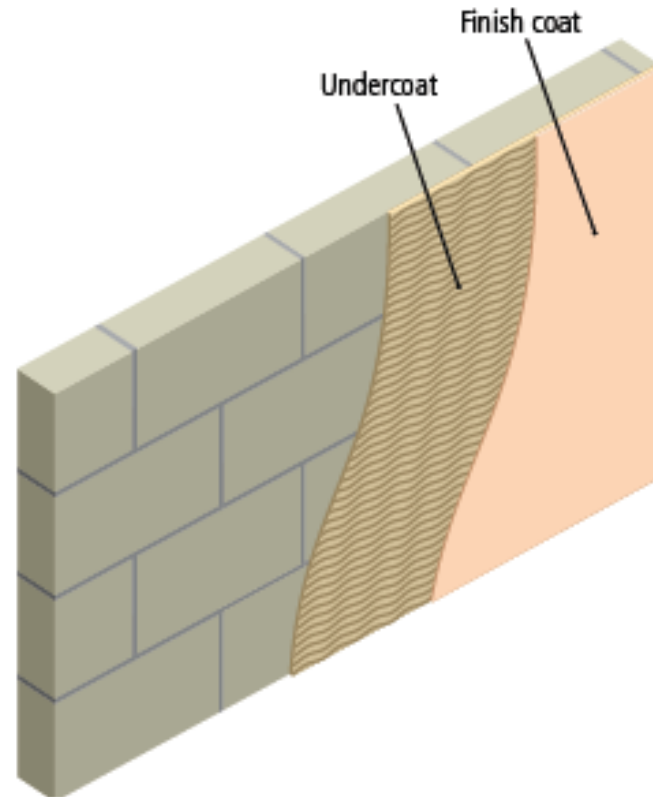
- Plastering/Rendering
- Improves:
  - Thermal insulation
  - Acoustic insulation
  - Durability of the wall



# Internal Wall Finish



*Fig. 10.30 The three-stage method plaster finish.*



*Fig. 10.31 The two-stage method plaster finish.*



# Dry Lining

Keeps internal plaster dry from moisture penetrating external wall.

