

Lecture 2.11

Detailed Specifications of Building Works

Estimation & Costing

Agenda

- Earthwork in Excavation
- Plain Cement Concrete (PCC)
- First Class Brickwork
- Plastering Work
- Summary

1. Earthwork in Excavation (Foundation)

- **Clearance:** The site shall be cleared of all trees, roots, and rubbish before excavation.
- **Dimensions:** Excavation shall be strictly as per the trench widths and depths specified in the foundation plan.
- **Shoring:** Timbering and shoring shall be provided in loose soil to prevent collapse.
- **Dewatering:** If water is met with, it shall be pumped out at the contractor's expense.
- **Measurement:** Measured in **Cubic Meters (m^3)**.

2. Plain Cement Concrete (PCC) 1:4:8

Component	Specification
Materials	Cement (IS:269), coarse river sand, and 40mm graded broken stone aggregate.
Mixing	Machine mixed. If hand-mixed, done on a watertight platform with 10% extra cement.
Laying	Laid in layers not exceeding 150mm, rammed until mortar creams to the surface.
Curing	Kept continuously wet for at least 7 to 10 days.

3. First Class Brickwork in Cement Mortar (1:6)

Materials & Preparation

Bricks must be First Class, machine-molded, well-burnt, and ringing sound. Bricks must be soaked in clean water for at least 2 hours before laying.

- **Laying:** Laid in **English Bond**. All courses shall be perfectly horizontal and walls strictly plumb.
- **Joints:** Mortar joints shall not exceed 10mm in thickness.
- **Curing:** Masonry shall be kept wet for a minimum of 10 days.
- **Measurement:** Measured in **Cubic Meters (m^3)** (Half brick walls in m^2).

4. Plastering (12mm thick in 1:4)

- **Surface Preparation:** Masonry joints shall be raked out to a depth of 10mm while the mortar is still green. Surface washed and thoroughly wetted.
- **Application:** Mortar (1 cement : 4 sand) applied forcefully and leveled using wooden floats.
- **Finish:** Finished perfectly true and smooth. Thickness shall strictly not be less than 12mm.
- **Curing:** Cured by sprinkling water for at least 7 days.

Measurement

Measured in **Square Meters (m^2)**. Deductions made for openings (doors/windows) as per IS: 1200 rules.

Summary

- Detailed specifications serve as the ultimate instruction manual for construction.
- **Earthwork, PCC, Brickwork, and Plastering** are core items with stringent quality criteria defined by PWD.
- Proper adherence ensures **structural integrity, durability, and fair payment** based on precise measurement modes.