

DI04006021: Estimation & Costing

Lecture 45: Rate Analysis of Different Items of Work

Slide Creator

Item: Earthwork in excavation in foundation (10m^3)

- **Materials:** None required.
- **Labor:** Task work is 3m^3 per Mazdoor per day.
- **Labor needed:** For 10m^3 , $10/3 = 3.33 \approx 3.5$ Mazdoors. Add 0.5 Beldar for dressing.
- **Cost:** Calculate
(4 laborers $\times$ Daily Wage) + T&P + Water + Profit.

Rate Analysis: Concrete Work (PCC 1:4:8)

Item: PCC 1:4:8 in foundation (10m^3)

- **Dry Volume:** 10m^3 wet concrete requires approx. 15.2m^3 dry volume.
- **Cement:** $(1/13) \times 15.2 = 1.17\text{m}^3 \approx 34$ bags.
- **Sand (Fine Aggr.):** $(4/13) \times 15.2 = 4.68\text{m}^3$.
- **Coarse Aggr.:** $(8/13) \times 15.2 = 9.35\text{m}^3$.
- **Labor:** Mason (1.5), Mazdoor (10), Bhisti (2).

Sustainable alternative: Replace a portion of cement with Fly Ash or use Recycled Aggregates.

Rate Analysis: First Class Brickwork

Item: Brickwork in CM 1:6 in superstructure (10m^3)

Component	Quantity for 10m^3
Bricks (Standard size)	5000 Nos
Dry Mortar Volume	$\approx 3.0\text{m}^3$
Cement (1:6)	$(1/7) \times 3.0 = 0.43\text{m}^3 \approx 13 \text{ bags}$
Sand (1:6)	$(6/7) \times 3.0 = 2.57\text{m}^3$
Scaffolding	Lumpsum
Labor	Mason (10), Mazdoor (10), Bhisti (2)