

Brick estimation

1. 1 brick without mortar = 9.5" x 4.5" x 2.75"
2. 1 brick with mortar = 10" x 5" x 3"
3. 1 cft = 12 bricks (with plaster)
4. 1 cft = 15 brick (without plaster)
5. Aggregate from brick increase 50-60% of volume .

Lecture -4

1. Which portion is deducted from dpc?

=>Door area

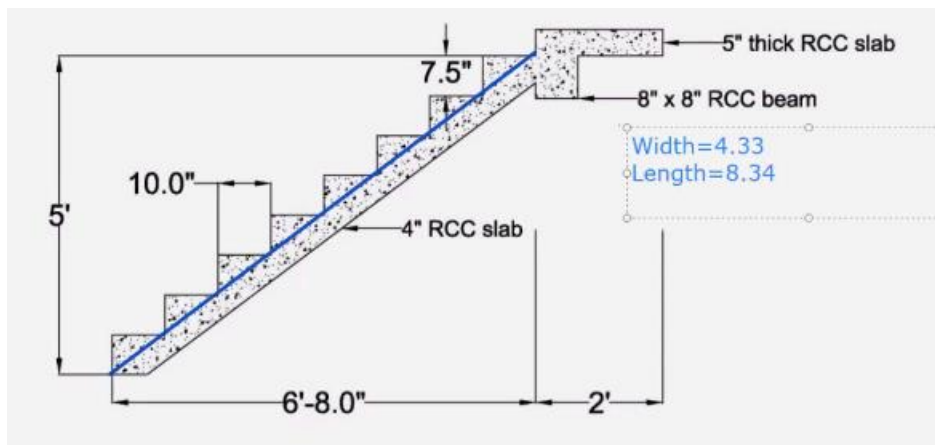
2. In the time of brickwork calculation, the length is equivalent to?

DPC = plinth wall BRICKWORK IN FOUNDATION

3. item no 11 stair section

Stair					
	Inclined Slab	2	8.34	4.33	0.33

Here the stair slab length is determined by trigonometry. Actually, the inclined length.



5. Rise and tread not more than 6 and 10 inch
3. Analysis – Determine load, Design – Determine dimension
4. Interior wall surface calculation = cc. flooring calculation
5. Why lime apply on the roof?
 - To avoid rain penetration by the voids
6. Door will consider always in interior plaster
7. Mild steel can be 1-9% of RCC volume

Zia sir lecture –

1. **Estimation** is the scientific way of working out the approximate cost of an engineering project before execution of the work.
প্রকল্প বাস্তবায়নের পূর্বে বৈজ্ঞানিক উপায়ে খরচ বের করার কৌশল
2. **It requires** – knowledge of material cost, labour cost, experience, foresight condition and good judgement.
3. **A good cost** will differ 5-10% from app. Cost.
4. **Need of estimation** – know item quantity and cost, tender, proposal approve
5. **Affecting cost** – diff. type construction, labour skill, weather, ground condition, area condition, supply of materials, machines.
6. **Workflow of estimator** – Visit site, note location and other facilities-water light access
7. **Data required to prepare an estimate:**
 1. Drawings i.e. Plans, elevations, sections etc.
 2. Specifications.
 3. Rates.
8. **LUMPSUM:**

While preparing an estimate, it is not possible to workout in detail in case of petty items. Items other than civil engineering such items are called lumpsum items or simply L.S.Items.
9. **The following are some of L.S. Items in the estimate.**
 1. Watersupplyandsanitaryarrangements.
 2. Electricalinstallationslikemeter,motor,etc.,
 3. Architecturalfeatures.
 4. Contingenciesandunforeseenitems.

10. Classification

1 = Rough cost estimate.

2 = Detailed estimate.

- Contractor's estimate - It is made by the contractor for determining the price or prices to be bid.
- Engineer's estimate - This type of estimate is made by the Engineer (Consultant) usually for the purposes of financing the work and for checking bids and running bills submitted by contractors.
- Progress estimate

Method of detailed estimate -

- SEPARATE OR INDIVIDUAL WALL METHOD
- CENTER LINE METHOD

SEPARATE OR INDIVIDUAL WALL METHOD

- The walls running in one direction are termed as "**long walls**" and the walls running in the transverse direction, as "**Short walls**", without keeping in mind which wall is lesser in length and which wall is greater in length.
- **Long wall length out-to-out**
 - = Center to center length + half breadth on one Side + half breadth on other side.
 - = Center to center length + one breadth
- **Short wall length in-to-in** = Center to Center length - one breadth.
- The same rule applies to the **excavation in foundation**, to **concrete bed in foundation**, **D.P.C.**, **masonry in foundation** and **super structure** etc.
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Estimation of a Residential Building

Table: Abstract of Estimated Cost

Item No.	Particulars of Items of Work
1	Earthwork in foundation
2	Brick Soling under foundation
3	Cement Concrete in foundation (1:3:6)
4	1st class brickwork in foundation
5	DPC
6	Lime concrete under CC floor
7	CC flooring
8	Brickwork in Superstructure (Ground floor)
9	Brickwork in Superstructure (1st floor)
10	Brickwork in Roof
11	RCC (1:2:4) in ground floor
12	RCC (1:2:4) in 1st floor
13	RCC (1:2:4) in Roof and stair room
14	Lime concrete roof terracing
15	Plastering in Ground floor
16	Plastering in 1st floor
17	Plastering in stair room
18	Mild Steel bars @1% of total RCC work
19	Sal Wood Works for Chowkath
20	Kathal wood Door leaf/Shutter
21	Aluminum sliding window (SS color)
22	White Wash 3 coats
23	Color Washing
24	M.S. Grill in Verandah
25	M.S. Gate
26	Glaze tiles in ground floor
27	Glaze tiles in 1st floor

Total	4099269.00
Add 3% for contingencies	122979.00
Add 2% for workcharged establishment	81986.00

Procedure –

1. Study Floor plan and calculate the center to center distance of segments
2. Earthwork in foundation is cut out box from ground
3. Brick soling in foundation – calculation of brick soling area only
4. Cement concert in foundation – lowest level of foundation parts volume calculation
5. 1st class brickwork in foundation – foundation lift by lift calculation
6. DPC = wall area x grade beam breadth – door sills
7. Lime concrete under CC floor/ CC Flooring= include all floor area

8. Brickwork in superstructure – volume of total bricks along wall
Deduction = lintel, door, openings
9. RCC = lintel, sunshades, stair
Slab + cornice,(lintel, sun, stair), deduction main gate
Roof slab + stair room slab – deduction staircase
10. Lime concrete roof terracing = whole floor plan area + cornice
11. Plastering = wall, sunshade, cornice, staircase
Deduction = openings(veranada, W,D V)
12. Mild steel is 1% of RCC work
13. Sal wood for chowkath, kathal for shutter

1	Earthwork in foundation	
2	Brick soling	Same as 1
3	CC IN FOUNDATION	Same as 1
4	1st class brickwork	Same as 1
5	DPC	Same as 1
6	Lime concrete under CC	Clear distance
7	CC flooring	Clear distance
8	Brickwork in superstructure	Unique – CC distance+.83'
9	Brickwork in superstructure 1st floor	"
10	Brickwork in roof	"
11	RCC in GF	Unique
12	RCC in 1st floor	Unique
13	RCC in roof and stair room	
14	Lime concrete in roof terracing	
15	Plastering in ground floor	
16	Plastering in 1st floor	
17	Plastering in stair room	
18	Mild steel bars	
19	Kathal Wood	
20	Sal wood	
21	Aluminum Sliding windpw	
22	White wash 3 coats	
23	Color washing	
24	MS gate	
25	Glalze tile Ground floor	
26	Glaze tile 1st floor	