Good Construction Practices – Part I
Cost Estimation and budgeting
- Layout planning, drawing preparation & approval
- Excavation, foundation, plinth beam or brickwall up to plinth, DPC, compound wall
- Brick wall up to roof, lintels & Chajjas and openings for doors/ windows, septic tank
- Shuttering for slab, reinforcement fixing, concreting
- Electrical conduit, Plastering work, floor concreting & roof water proofing, water supply & sanitary pipe fixing
- Floor tiles, painting, electrical wiring, fittings in bath/kitchen, door & window shutters, electrical fittings
- Plinth protection, final painting, check list, billing
Estimation of Material Requirements

- For M-20 grades of concrete of 1 cu. m.
  - Cement 6.5-7.5 bags, Sand- 0.4m³, CA- 0.83m³, water 21-22 litre

- For 100sq.m (1076 sq. ft.) Slab of 4” thk-
  - Cement 79 bags, Sand- 4.2m³, CA- 8.3m³,

- For plaster of 100 sq. m.

<table>
<thead>
<tr>
<th>Mix Ratio</th>
<th>Thickness</th>
<th>Cement</th>
<th>Sand</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:4</td>
<td>12mm thk</td>
<td>12 bags</td>
<td>1.6m³</td>
</tr>
<tr>
<td>1:4</td>
<td>20mm thk</td>
<td>20 bags</td>
<td>2.6m³</td>
</tr>
<tr>
<td>1:6</td>
<td>12mm thk</td>
<td>9 bags</td>
<td>1.8m³</td>
</tr>
<tr>
<td>1:6</td>
<td>20mm thk</td>
<td>12 bags</td>
<td>3.0m³</td>
</tr>
</tbody>
</table>

- For brick works of 1 cu. M.- 500 bricks are required.
Centering (FORMWORK)

- Formwork should be watertight so that there is no loss of cement paste through it.
- Properly leveled centering will minimize the cost of finishing.
- Supports should be provided to slab and beam at sufficient distance.
- Apply a mixture of Greece and diesel before using.
Formwork

Good construction practices
Why cover blocks?
Do not use of Aggregates as Cover Blocks
Good construction practices
Cover Blocks for Durability
Cover Blocks

- Use Proper Cover Blocks
- As per IS, cover should be
  - 40mm for columns
  - 25 mm for columns of minimum dimension of 200 mm or under
  - 50 mm for Footing
  - 30mm for moderate exposure
  - 20mm for mild exposure (15mm if bars of 12mm dia are used)
Control Slump

Good construction practices
Concrete Mixing

- Keep a close watch on water quantity while mixing
- Minimum mixing time should be 2 mins.
- Use Admixtures only if required.
- Admixture dosage should be optimum. Do not add more/less quantity.
- Admixture should be first added in water and then can be mixed with other ingredients.
- Mortal Plasticizer should be used only for Mortar and concrete plasticizer for concrete.
- Use good quality Water proofing chemical which should be chloride free.
- For RCC minimum grade of concrete should be M 20
Add Water by Measurement at Construction Site
Good construction practices
Segregation & Bleeding

Avoid Segregation & bleeding of concrete
Segregation
Good construction practices
Placing of Concrete

- Walking rails should be provided on slabs before concrete placement so that R/F will not get disturbed/damaged.

- Concrete should be poured from more than 1 m height to avoid segregation.
Compaction means removing air from concrete.

- It will reduce the voids.
- Lesser the voids, stronger the concrete.
- Proper compaction will ensure Water tightness.
- For manual compaction of slab use Wooden float and 16 mm bar.
Compaction

Good construction practices