

1. Height of parapet wall should be 1m
2. Thickness of DPC = 2.5cm or 1"
3. Height of each Floor = 3.15m
4. Maximum height of window = 2.1m
5. One bag of cement = 1.226 cft or 0.0347m³
6. Weight of one cement bag = 50kg
7. Minimum Thickness of slab = 125mm
8. No of cement bags in 1m³ = 28.818 bags
9. Minimum Lintel depth = 15cm
10. Lintel is provided at 2.1m in case of brick wall
11. Minimum diameter of bars used in slab = 8mm
12. Minimum diameter of bars used in column = 12mm
13. Minimum diameter of bars in dowel bars = 12 mm
14. Maximum diameter of bars in slab = $\frac{1}{8}$ x thickness of slab
15. Maximum chair spacing = 1m
16. Dimensional tolerance of cube = +2mm
17. Maximum water absorption of first class brick = 20% of its dry wt
18. Initial setting time of cement = 30min
19. Final setting time of cement = 10hrs / 600 min
20. OPC- Ordinary Portland Cement
21. DPR- Detailed Project Report
22. Unit weight of
 - RCC = 25KN/m³ = 25000 N/m³
 - PCC = 24KN/m³ = 24000 N/m³
 - Steel = 7850kg/m³
- 23.1 Gallon = 3.78 liters
24. Minimum no of bars for,
 - Square or rectangular column = 4 bars
 - Circular column = 6 bars
25. Standard sand in India is obtained from Ennore, Tamilnadu
26. 1 yard = 3 feet
27. Weight of steel = $\frac{D^2}{162.2}$ kg/m or $\frac{D^2}{532.1}$ kg/ft
28. Slope of staircase = 25o-40 o
29. Size of concrete testing cube = 150x150x150mm
30. Concrete cube is filled in 3 layers
31. Slump cone is filled in 4 layers
32. Cement should be used within three months of manufacturing.
After three months it should be tested.
33. Minimum thickness of shear wall = 150mm
34. Maximum thickness of shear wall = 400mm

35. Universal Testing Machine (UTM) is used for compression test of concrete and Tensile test of steel reinforcement
36. Minimum curing period,
7 days- normal weather condition
10 days- dry & hot weather condition
37. Minimum percentage of steel in column = 0.8% of gross area
38. Maximum percentage of steel in column = 4% of gross area
39. Nominal cover,
Footing = 50mm
Column = 40mm
Slab = 20mm
Beam = 25mm
40. Lapping is not allowed in bars of diameter 36mm or more, more than 36mm diameter of bars, welding is preferred
41. No. of stirrups in beam = $\frac{\text{clear span}}{\text{c-c spacing}} + 1$
42. RCC is affected by water because of corrosion of reinforcement bars
43. PCC is not affected by the water
44. Maximum free fall of concrete = 1.5m
45. Least count ,
Compass = 30' (30 minutes)
Dumpy level = 5mm
Auto level = 5mm
Theodolite = 20" (20 seconds)
46. Air voids left in concrete is called as Honeycombing
47. The transverse reinforcement of column are called Ties
48. The transverse reinforcement of beams are called Stirrups
49. TMT- Thermo Mechanically Treated Bars
TMX- Thermax Powdered Bars
SD- Super Ductile Bars
HYSD- High Yield Strength Deformed Bars
CTD- Cold Twisted Bars
50. Staircase Riser = 150mm-200mm
Staircase Tread = 250mm-300mm
51. Minimum hook length = 9D
52. Standard size of brick = 19x9x9cm
53. Modular size of brick = 20x10x10cm
54. No of bricks in 1m³ = 500 bricks (for brick size 190x190x90mm)
55. No of bricks in 230mm brick wall in 1 cubic meter = 450 bricks
(including wastage for brick size 230x100x75mm)

- 56.No of bricks in 115mm brick wall in 1 square meter=56 bricks
- 57.8-12kg of binding wire is used per metric tone of steel, 1000kg=8kg-12k
- 58.Cement ingredients are burnt at 1400oc temperature
- 59.1 BHK stands for -1 Bedroom, 1 Hall, 1 Kitchen
- 60.Short columns fail in crushing
- 61.Long Columns fail in buckling
- 62.Intermediate columns can fail both in buckling & crushing
- 63.Lapping in tension, $L=45D$ to $60D$
- 64.Lapping in compression, its development length not less than $24D$
- 65.Strength of reinforcement should not be less than 15% of its designated strength
- 66.Compressive strength of bricks,
First class bricks= $105\text{kg}/\text{cm}^2$
Second class bricks= $70\text{kg}/\text{cm}^2$
Third class bricks= $35\text{kg}/\text{cm}^2$
Fire bricks= $125\text{kg}/\text{cm}^2$
- 67.Hook angle of stirrup should be 135°
68. Deshuttering time for different RCC members,
- a.Columns &RCC walls -16-24 hrs
 - b.Soffit frame work for slabs -3 days (props are refixed after removal)
 - c.Beams spanning 4.5m -7 days (props are refixed)
- Removal of props
- d.Beams spanning more than4.5m -14 days
 - e.Arches spanning 6m -14 days
 - f.Arches spanning more than 6m -21 days
- 69.The longitudinal bars should be bent at 90° & 2 bent length should not be less than 18" or 1.5 ft
- 70.End hook for longitudinal bar is bent should be 90°
- 71.Not more than 50% of bars should be lapped in a zone
- 72.PH of water used in concrete should not be less than 6.
- 73.Low heat cement is used in Dams , Abutment & Retaining walls because heavy structures are prone to thermal cracks
- 74.Cement :Sand : Aggregate ratio for different grades of concrete,
- a. M7.5 1:4:8
 - b. M10 1:3:6
 - c. M15 1:2:4
 - d. M20 1:1.5:3
 - e. M25 1:1:2
- 75.Segregation is separation of cement ,sand &aggregates
- a.This is caused due to improper water cement ratio
 - b.It is also caused when concrete is poured above 1.5m high

76. Bleeding- When water comes out from freshly made concrete is called as bleeding of concrete
77. Retarder is an admixture added to concrete which keeps concrete workable for longer time. It increases setting time of concrete. Eg sugar , Gypsum are retarder
78. Plasticizer is an admixture added to concrete for increase the workability
79. Deflection means temporary displacement
80. Deformation is permanent displacement
81. The ratio of weight of water to the weight of cement is called water cement ratio
82. Usage of cements,
- Ordinary Portland cement- General Construction
 - Low heat cement – Dams, abutments & retaining wall
 - Sulphate resisting cement – Marine structures, prone to sulphate attack
83. Grades of OPC

Grade	Compressive strength (N/mm ²)		
	3 days	7 days	28 days
33	16	22	33
43	23	33	43
53	27	37	53

84. Dimensions of slump cone,
- Height=30cm
 - Top diameter=10cm
 - Bottom diameter=20cm

85. Types of slump



86. Slump value for different members

- Columns - 75-150mm
- Beams & slabs - 50-100mm
- Pavements - 20-30mm
- Bridges - 30-75mm

87. Tensile strength of concrete = $0.7\sqrt{f_{ck}}$

f_{ck} - Flexural strength (M20, $f_{ck} = 20 \text{ N/mm}^2$)

88. Modulus of elasticity of concrete, $E_c = 5000\sqrt{f_{ck}}$

89. Characteristic strength—Strength of below which not more than 5% of test results are expected to fall
90. Ordinary concrete, M10-M20
91. Standard Concrete, M25-M55
92. High Strength concrete, M60-M80
93. Minimum grade of RCC-M20
94. In mixture machine concrete should be mixed for 2-3 minutes
95. Storage of cement,
- a. Cement should be stored in dry places
 - b. 200mm away from floor (in a platform)
 - c. 300mm away from walls
 - d. Not more than 10 bags stacked
 - e. Away from moisture and chemicals
96. Water absorption for building stones should be less than 5%
97. F.O.S for steel = 1.15
98. F.O.S for concrete = 1.5
99. Young's modulus of steel, $E_s = 2 \times 10^5 \text{ N/mm}^2$
100. Types of steel ,
- Mild steel, Fe 250,
 $f_y = 250 \text{ N/mm}^2$
 - High yield strength deformed bars (HYSD),
Fe 415, $f_y = 415 \text{ N/mm}^2$
Fe 500, $f_y = 500 \text{ N/mm}^2$

