



CENTRE FOR INSPECTION, TESTING & CERTIFICATION OF MATERIALS-CITCOM

Client

Project :

Date :

Contact Person:

Location:

CONCRETE MIX PROPORTIONING - MIX DESIGN

MANDATORY INFORMATION FORMAT

| Sl. | Design Stipulations | Specified Criteria for Mix Proportion | | | | | |
|------------|---|---|--|--|--|--|--|
| (A) | CONCRETE DETAILS: | | | | | | |
| 1. | Grade of Concrete (M 20 to M 60-28 days Comp.Strength of 150 mm Cubes) | | | | | | |
| 2. | Concrete Quality-Strength/Performance | Ord. <input type="checkbox"/> | Std. <input type="checkbox"/> | HSC <input type="checkbox"/> | HPC <input type="checkbox"/> | HVF <input type="checkbox"/> | SCC <input type="checkbox"/> |
| 3. | Type of Concrete-Structural Classification | PCC <input type="checkbox"/> | RCC <input type="checkbox"/> | PSC <input type="checkbox"/> | PQC <input type="checkbox"/> | DLC <input type="checkbox"/> | Others <input type="checkbox"/> |
| 4. | Placing Conditions of Concrete (Structural Elements) | Building <input type="checkbox"/> | Bridge <input type="checkbox"/> | Road <input type="checkbox"/> | ICBP <input type="checkbox"/> | OHT <input type="checkbox"/> | Other <input type="checkbox"/> |
| (B) | MIX DESIGN LIMITS: | | | | | | |
| 5. | Water-Cement Ratio (W/C)-Optional | 0.30 <input type="checkbox"/> | 0.35 <input type="checkbox"/> | 0.40 <input type="checkbox"/> | 0.45 <input type="checkbox"/> | 0.50 <input type="checkbox"/> | Other <input type="checkbox"/> |
| 6. | Min. Cement Content-Optional-kg/m ³ | 300 <input type="checkbox"/> | 320 <input type="checkbox"/> | 340 <input type="checkbox"/> | 360 <input type="checkbox"/> | 380 <input type="checkbox"/> | Other <input type="checkbox"/> |
| (C) | EXPOSURE CONDITIONS: | | | | | | |
| 7. | Type of Environmental Exposure | Mild <input type="checkbox"/> | Mod. <input type="checkbox"/> | Severe <input type="checkbox"/> | V.Severe <input type="checkbox"/> | Extreme <input type="checkbox"/> | Others <input type="checkbox"/> |
| 8. | Whether Exposed to Sulphate Attack from Soil, Water & Containment | Yes <input type="checkbox"/> | | No <input type="checkbox"/> | | Not Known <input type="checkbox"/> | |
| 9. | Whether Exposed to Chloride Attack from Soil, Water & Containment | Yes <input type="checkbox"/> | | No <input type="checkbox"/> | | Not Known <input type="checkbox"/> | |
| (D) | CONCRETE INGREDIENTS: | | | | | | |
| 10. | Source of Water for Construction | Ground <input type="checkbox"/> | River <input type="checkbox"/> | Mun. <input type="checkbox"/> | Pond <input type="checkbox"/> | Waste <input type="checkbox"/> | Other <input type="checkbox"/> |
| 11. | Type of Cement & Strength Grade | OPC Gr. 43 <input type="checkbox"/> | OPC Gr. 53 <input type="checkbox"/> | PPC FAB <input type="checkbox"/> | PPC BFS <input type="checkbox"/> | SRC Cement <input type="checkbox"/> | Other Cement <input type="checkbox"/> |
| 12. | Brand, Batch No./Week/Year of Cement | <input type="text"/> | | <input type="text"/> | | <input type="text"/> | |
| 13. | Cementitious Materials Proposed for Improvement of Density & Permeability | Microsilica/ Silica Fume <input type="checkbox"/> | GGBF Slag <input type="checkbox"/> | Fuel Ash/ Fly Ash <input type="checkbox"/> | Other Pozzolona <input type="checkbox"/> | | |
| (E) | FRESH CONCRETE PROPERIES: | | | | | | |
| 14. | Degree of Workability/Consistency | V. Low <input type="checkbox"/> | Low <input type="checkbox"/> | Medi. <input type="checkbox"/> | High <input type="checkbox"/> | V. High <input type="checkbox"/> | Sec <input type="checkbox"/> |
| 15. | Desired Slump of Cocrete mm | 00 <input type="checkbox"/> | 25-50 <input type="checkbox"/> | 50-100 <input type="checkbox"/> | 75-100 <input type="checkbox"/> | 100-150 <input type="checkbox"/> | Other <input type="checkbox"/> |



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INDUSTRIAL TESTING & ANALYTICAL LABORATORIES

CENTRE FOR INSPECTION, TESTING & CERTIFICATION OF MATERIALS-CITCOM

| Sl. | Design Stupulations | Specified Criteria for Mix Proportion | | | | | |
|-------|--|---|--|--|--|--|---|
| 16. | Desired Compaction Factor (C.F.) | 0.60 <input type="checkbox"/> | 0.70 <input type="checkbox"/> | 0.80 <input type="checkbox"/> | 0.90 <input type="checkbox"/> | 1.00 <input type="checkbox"/> | Other <input type="checkbox"/> |
| 17. | Desired Air Content of Fresh Concrete-% v/v | 1.0 <input type="checkbox"/> | 2.0 <input type="checkbox"/> | 3.0 <input type="checkbox"/> | 4.0 <input type="checkbox"/> | 5.0 <input type="checkbox"/> | Other <input type="checkbox"/> |
| ① 18. | QUALITY CONTROL AT SITE: Degree of Quality Control at Project Site (For Standard Deviation) | V. Good <input type="checkbox"/> | Good <input type="checkbox"/> | Fair <input type="checkbox"/> | Std. Lab. <input type="checkbox"/> | | |
| 19. | Tolerance Level in Quality Control at Site (Accepted Proportion of Low Results) | 1 in 20 <input type="checkbox"/> | 1 in 40 <input type="checkbox"/> | 1 in 100 <input type="checkbox"/> | Other <input type="checkbox"/> | | |
| 20. | Available Test Facilities at Project Site for Materials & Fresh/Hardened Concrete | Sieve Test <input type="checkbox"/> | Slump Test <input type="checkbox"/> | Comp. Factor <input type="checkbox"/> | Comp. Strength <input type="checkbox"/> | Net Yield <input type="checkbox"/> | Bulk Density <input type="checkbox"/> |
| 21. | Max. Size of Coarse Aggregate (MSA)-mm | 63 <input type="checkbox"/> | 40 <input type="checkbox"/> | 20 <input type="checkbox"/> | 12.5 <input type="checkbox"/> | 4.75 <input type="checkbox"/> | Other <input type="checkbox"/> |
| 22. | Type of Coarse Aggregate (Stone Grit) | Crushed <input type="checkbox"/> | Natural <input type="checkbox"/> | Synthetic <input type="checkbox"/> | RBM <input type="checkbox"/> | Others <input type="checkbox"/> | |
| 23. | Source of Coarse Aggregate (Stone Grit) | Quarry | | | Location | | |
| 24. | Type of Fine Aggregate (Sand/Stone Dust) | River Sand <input type="checkbox"/> | Quarry Dust <input type="checkbox"/> | Crushed Stone <input type="checkbox"/> | Others Specify <input type="checkbox"/> | | |
| 25. | Source of Fine Aggregate (Sand) | Quarry: | | | Location | | |
| 26. | Admixture Proposed to be Used (Batch MTC to be Submitted to Lab) | Brand Name: | | | Batch No.: | | |
| 27. | Type of Concrete Placement Facility at Project | Manual Lift <input type="checkbox"/> | Hydraulic Bucket <input type="checkbox"/> | Concrete Pump <input type="checkbox"/> | | | |
| 28. | Type of Compaction Equipment | Plate Vibrator <input type="checkbox"/> | Needle Vibrator <input type="checkbox"/> | Vibro Hyd. Pressure <input type="checkbox"/> | Piling Concrete <input type="checkbox"/> | | |
| 29. | Weather Conditions During Placement | Normal <input type="checkbox"/> | Hot <input type="checkbox"/> | Cold <input type="checkbox"/> | Under Water <input type="checkbox"/> | | |
| 30. | Thickness of Concrete Element - Slab/Column/Raft/Footing | <10 cm <input type="checkbox"/> | 10-15 cm <input type="checkbox"/> | 15-30 cm <input type="checkbox"/> | 30-60 <input type="checkbox"/> | 0.5-1m <input type="checkbox"/> | 1-3m <input type="checkbox"/> |



MATERIAL QUANTITY FOR CONCRETE MIX DESIGN

[Estimated Quantity of Materials for Trial Mix Concrete Batches]

MANDATORY MATERIALS

| Sl | Description of Material/Ingredient | Application | | Total Qty. Quantity | Packing Quantity in Units |
|----|---|--------------------------|--------------------------|---------------------|---------------------------|
| | | Yes | No | | |
| 1. | Admixture/Plasticizer with Batch MTC as per IS: 9103-1999 | <input type="checkbox"/> | <input type="checkbox"/> | 05 Litre | 1 x 05 Litre |
| 2. | Water for Construction Purposes from Site as per IS: 456-2000 | <input type="checkbox"/> | <input type="checkbox"/> | 60 Litre | 3x20 Litre |
| 3 | Cement OPC/PPC with Copy of MTC as per IS: 8112/IS:12269/IS:1489 | <input type="checkbox"/> | <input type="checkbox"/> | 150 kg | 3x50 kg Bag |
| 4. | Fine Aggregate-Sand/Stone Dust-Crusher Dust with Source/Location as per IS:383. | <input type="checkbox"/> | <input type="checkbox"/> | 200 kg | 8x25 kg Bag |
| 5. | 10 mm Coarse Aggregate/Stone Grit with Source/Location as per IS:383 | <input type="checkbox"/> | <input type="checkbox"/> | 200 kg | 8x25 kg Bag |
| 6. | 20 mm Coarse Aggregate/Stone Grit with Source/Location as per IS:383. | <input type="checkbox"/> | <input type="checkbox"/> | 400 kg | 16x25 kg Bag |

OPTIONAL MATERIALS

| | | | | | |
|-----|--|--------------------------|--------------------------|----------|--------------|
| 7. | 40 mm Coarse Aggregate/Stone Grit with Source/Location Identification. | <input type="checkbox"/> | <input type="checkbox"/> | 500 kg | 20x25 kg Bag |
| 8. | Fly Ash/Fuel Ash of Suitable Quality as per IS: 3812 Part 1/2-2003. | <input type="checkbox"/> | <input type="checkbox"/> | 150 kg | 6x25 kg Bag |
| 9. | Silica Fume/Microsilica as per IS: 15388: 2003. | <input type="checkbox"/> | <input type="checkbox"/> | 100 kg | 4x25 kg Bag |
| 10. | Concrete Curing Compound-Liquid as per BS: 7542 & ASTM C 309. | <input type="checkbox"/> | <input type="checkbox"/> | 10 Litre | 2x05 Litre |

