

DIVISION 3 – CONCRETE (not including roads)

03 00 00 CONCRETE

03 10 00 – CONCRETE FORMWORK

A. General

1. Provide for inspection of formwork by Architect/Engineer and Owner's Representative before concrete is placed.
2. Formwork shall be in accordance with ACI 347.

03 20 00 – CONCRETE REINFORCEMENT

A. Concrete Stairs

1. Reinforce nosings with minimum #3 reinforcing bar.

B. Interior slabs and equipment pads.

1. Generally provide steel reinforcement.
2. Provide moisture barrier, where required appropriate to each situation.

03 30 00 – CAST-IN-PLACE CONCRETE

A. General

1. Show design stresses, floor live loads and soil bearing values on drawings.
2. Use minimum concrete strength of 4000 psi at 28 days.
3. Concrete shall be furnished, placed, finished and cured in accordance with ACI 301.
4. Concrete mix design shall be submitted for review along with field tests or design documentation to substantiated design strength.
5. Specify a single brand of cement in all exposed concrete to obtain greater uniformity of color. Prefer gray color, not white. Obtain material from same source throughout the work.
6. Concrete design and specification requirements should be in accordance with "Building Code Requirements for Reinforced Concrete" (ACI 318).
7. Where concrete is to be exposed to view, specify that aggregate not contain iron or other staining elements.

8. Prohibit use of calcium chloride or other salts as anti-freeze or accelerated-set additives.
9. Water reducing admixtures are permitted. High range water reducing admixtures may be used at the Consultant's discretion.
10. Specify air-entrained concrete where exposed to freeze-thaw conditions. Percentage of air as recommended in ACI 301, minimum of 5%.
11. Consider specifying a super plasticizer where appropriate.
12. Specify procedures to be followed in both hot and cold weather operations be submitted for approval.
13. Specify minimum 4" or 5" slab thickness where reinforcing may be embedded. Conduit may penetrate through a slab but may not be embedded continuously unless approved by Owner.
14. Concrete testing in accordance with ACI 301.
15. Include specific instruction controlling finish tolerance (floors, walls, etc.).
16. Interior Slabs – Specify surface hardener where exposed. Surface should be cleaned thoroughly before hardener is applied.
17. Specify the Constructor to provide concrete delivery slips to the CPM after every pour.
18. The use of supplemental cementitious materials is encouraged, both fly ash and ground granulated blast furnace slag. Mix designs must be fully documented prior to approval. For exposed concrete color, consistency is required.
19. Separate mix designs for different applications are encouraged to optimize finishing characteristics.
20. Provide float finish for concrete to receive a ceramic tile finish

B. Crack Control

1. The Design Professional shall include measures to minimize cracking.
2. Construction, control and contraction joints shall be indicated in the documents.
3. Fiber reinforcing as a crack deterrent where applicable is encouraged.
4. Cracking is not acceptable where concrete will be the finished surface. Repair and/or replacement will be required.

03 40 00 – PRECAST CONCRETE

A. General

1. When precast concrete is used, require that fabricator have past record of competent performance on jobs of comparable size and complexity.
2. Specify that fabricator be fully responsible for design of reinforcing for transit and lifting as well as for ultimate use.
3. Specify that all necessary attachments and connecting inserts be included and shown on shop drawings.
4. Include references to ACI and PCI as appropriate for precast items being specified.
5. Design Professional shall specify all uniform and concentrated load combinations and possibilities for the units.