

SECTION 03300C – CAST IN PLACE CONCRETE

PART 1 - GENERAL

1.1 REFERENCED STANDARDS

- A. ACI Standard Specification for Structural Concrete for Building (ACI 301, current edition).
- B. ACI Recommended Practice for Hot Weather Concreting (ACI 305R, current edition).
- C. ACI Recommended Practice for Cold Weather Concreting (ACI 306R, current edition).

1.2 SUBMITTALS

- A. Submit for approval in addition to the requirements of ACI 301:
 - 1. Schedule for concrete placement
 - 2. Concrete mix designs and concrete cylinder compression test results
 - 3. Written description of hot and cold weather concreting procedures.
 - 4. Written description of method for curing concrete.
- B. Shop drawings showing details of the work, including all steel reinforcement.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Concrete: Normal weight, air-entrained, conforming to ASTM C94
 - 1. Design compressive strength of 4,000 psi min.
 - 2. Maximum water/cement ratio of 0.45.
 - 3. Entrained air content of 6 percent plus or minus 1-1/2 percent.
- B. Cement: ASTM C150, Type I or II
- C. Aggregate: Fine and coarse aggregate conforming to ASTM C33. Maximum coarse aggregate size 3/4 inch.

D. Admixtures:

1. Air entraining mixture conforming to ASTM C260.
2. Water reducing admixtures conforming to ASTM C494 Type A or Type F.
3. Do not use chloride or admixtures containing calcium chloride.
4. The use of any additional admixture must be approved in writing by the Engineer prior to use.
5. No water shall be added to the concrete at the site. Adhere strictly to requirements for maximum slump for each mix.

E. Material for forms shall comply with the requirements of ACI 301 and ACI 347, Guide to Formwork for Concrete, current edition.

PART 3 – EXECUTION

3.1 INSTALLATION OF CONCRETE

- A. Concrete placing shall be continuous and in compliance with ACI except where more restrictive requirements are specified.
1. All concrete interfaces are to be bonded by preparing the surface of first placement per Sections 6.1.1, 6.1.2 and 6.1.3 ACI 301 followed by wetting and applying a 1/16 in. thick layer of neat cement grout immediately prior to concrete placement.
 2. Finishes are to be “smooth trowel” except where otherwise noted. Float surface once it has sufficiently stiffened. Check planeness of surface with a straightedge in all directions. Cut down high spots and fill low spots. Immediately refloat to a uniform non-directional sandy texture.
- B. Use only moist curing as specified in paragraphs 12.2.1.1, 12.2.1.2, 12.2.1.3, 12.2.1.4 and 12.2.1.5 of ACI 301.
1. Protect concrete against rapid drying and damage by rain and frost.
 2. Keep concrete moist for at least 7 days. Protect with liquid curing compound, or a covering that will not stain or discolor finished concrete surfaces.
 3. Spraying: Spray concrete during the curing period as frequently as drying conditions may require.
 4. During curing period, maintain concrete above 70°F for at least 3 days or above 50°F for at least 5 days.

- C. Protect all concrete work against damage during subsequent construction operations until final acceptance.
- D. For patching and filling comply with ACI 301, Chapter 9 and the material manufacturer's recommendations.

END OF SECTION