

**ENGINEERING DIRECTIVE**

CHIEF ENGINEER

**ACCEPTANCE CRITERIA FOR READY-MIXED CEMENT CONCRETE**

Effective immediately acceptance criteria for ready-mixed cement concrete is modified to more closely reflect the standards set forth in AASHTO, ACI and ASTM. All field personnel shall implement the following procedures:

1. A minimum of one set of five test cylinders per day shall be made per 150 CY of cement concrete or fraction thereof for each pour of each class:
  - One for 7-day breaks
  - Two for 28-day breaks
  - Two for 56-day breaks.
2. If the 28-day cylinder breaks fail to meet the specified strength, 56-day cylinder breaks shall be accepted as proof of reasonably close conformity with the specification.
3. If the 56-day cylinder breaks fail to meet the specified strength, the Contractor may request permission to core the concrete to verify its strength within 2 weeks of being notified that the 56-day cylinder breaks have failed. Coring may only be done with the permission of the Department, at locations chosen by the Department. The Department shall specify a minimum of 3 core locations. Core results shall be evaluated in accordance with ACI procedures whereby the average of all core breaks must exceed 85% of the specified design strength and no single core break may be less than 75% of the specified design strength.
4. The Contractor may request permission to core the concrete immediately after the failure of 28-day cylinder breaks, rather than waiting for 56-day cylinder tests, if waiting for later tests will compromise the project's schedule.
5. If the cylinder breaks (including the 56-day breaks) or the core breaks meet the specified design strength, the concrete shall be considered in reasonably close conformity with the specification in accordance with Division I, Section 5.03 and no credit shall be taken.

6. If all cylinder and core breaks fail to meet the specified strength, the remedy shall be decided on a case-by-case basis in accordance with Division I, Section 5.03. If determined to be reasonably acceptable, the concrete shall remain in place and a credit shall be calculated based on the individual deficiency. If determined to be unacceptable the concrete shall be removed and replaced at the expense of the Contractor.