

**FY 2012/2013 QC Category No. 8B**  
**STATEWIDE INSPECTION GUIDELIST**  
**Concrete Materials**

***PRODUCTION LIMITS***

1. Cold weather placements: mixing permitted if air temperature is 40 °F and rising and not permitted if below 45°F and falling. [Spec. 346-7]
2. Hot weather placements: approved hot weather mix required if concrete temperature is above 85°F. Concrete rejected if over 100°F. [Spec. 346-7]
3. Transit time: reject concrete that exceeds 60 minutes (non-retarded) and 90 minutes (retarded) prior to discharge. [Spec. 346-7]
4. When concrete placement stops for 90 min. or more, perform initial plastic properties tests on the next batch. [346-8]

***MIXING AND DELIVERY OF CONCRETE***

5. Concrete delivery ticket information is completely and accurately entered with required signatures prior to start of concrete placement. [Spec. 346-6]
6. Batch weights are within 1% (2% if load is 3 CY or less) of the design mix quantities and all cementitious materials are added together for the verification. Coarse and fine aggregate are verified separately. If any are out of tolerance, District Materials Office notified and Plant notified so corrective action can be taken. [MM 9.2 Volume II]
7. Mixer ID card must be in ready mix truck, if not, load rejected and truck out of service until ID card restored. [MM 9.2 Volume II, 346-8]
8. Drum revolution counter must be operating properly, if not, note on ID card. [MM9.2 Volume II]
9. Water measuring device on truck must operate properly and calibration information must be in truck. [MM 9.2 Volume II]
10. Water must not be added at the jobsite prior to slump testing and if the test is within the tolerance slump range, water may be added. [Spec. 346-7]
11. If jobsite water is added, mix concrete an additional 30 revolutions at mixing speed per spec.; however, this is not permitted if mixing revolutions have already exceeded 160. [Spec. 346-7]
12. If slump is within tolerance, the load can be placed but if slump is outside tolerance, reject the load. Concrete placement may proceed for the QC truck and the load after the QC truck while plastic properties tests are in progress. [Spec. 346-7, 346-8]

13. Concrete should be mixed for a maximum of 160 revolutions at mixing speed and a maximum of 300 revolutions is allowed before all concrete is discharged. [Spec. 346-7]
14. For high slump or self-consolidating concrete, a grate must be placed over conveyance equipment to capture lumps and balls. [Spec 346-6]

### ***SAMPLING AND TESTING***

15. Samples must be taken at the point of final placement: end of buckets, conveyor belts, pump hoses or chutes except that when discharged directly from mixer into bucket within 20 minutes, samples may be taken directly from mixer. Samples must be the composite of two portions. [Spec. 346-7]
16. Maximum LOT size must be per spec. and acceptance samples must be randomly selected by load number then taken from center of load. [ASTM C-172, Spec 346-9]
17. Sampling and testing equipment in proper condition and calibration: thermometers, slump cones, pressure meters (PM)/rollameters (RM), cylinder molds. [ASTM C-1064, 143, 231, 173, 470, Spec 346-5, FM 5-501]
18. Concrete temperature must be measured correctly. [ASTM C-1064, Spec 346-5]
19. W/C ratio must be computed correctly. [FM 5-501, Spec 346-5]
20. Percent air test must be performed correctly. [ASTM C-173 (RM), C-231(PM), Spec 346-5]
21. Slump test must be performed correctly. [ASTM C-143, Spec 346-5]
22. Concrete sample cylinders must be prepared properly at the site, curing boxes and tanks at the site must be maintained according to specs and all cylinders will be clearly identified as outlined in the Sample/Lot Numbering System instructions located on the State Materials Office website. [ASTM C-31, Spec. 346-9]
23. Cylinder transported from field to lab in proper manner and must be at the lab within 48 hours of placement in molds. [Spec. 346-5, ASTM C 31]
24. Provide Sample Transmittal Card (C-22) properly filled out. [Form 675-050-04]

### ***MASS CONCRETE***

25. Temperature control plan or revised temperature control plan approved by State Materials Office (SMO). [Spec. 346-3]
26. Mass concrete Specialty Engineer or his/her designated employee must be at the jobsite and personally inspect and approve monitoring devices for the 1<sup>st</sup> placement of each size and type of component. [Spec. 346-3]

27. If 35°F differential or the maximum 180°F core limit is exceeded, adjustments must be made immediately, as recommended by the Specialty Engineer, while heat is high, and subsequent mass placements must not proceed until SMO approves revised plan. [Spec. 346-3]
  
28. Temperature monitoring data must be recorded at intervals of 6 hours or less until there is certainty that the maximum temperature differential and maximum core temperature has peaked and is diminishing. Data must be transmitted to the Engineer within 3 days. [Spec. 346-3]
  
29. A structural integrity and durability analysis must be performed to evaluate the component condition if the 35° (20°C) differential is exceeded. [Spec. 346-3]