

POLICY FOR CERTIFICATION OF READY MIX PLANTS

**NATIONAL READY MIXED CONCRETE ASSOCIATION
PLANT CERTIFICATION**

Yes → **SUBMIT CERTIFICATION TO THE PCC ENGINEER** → **RECORD IN SITE MANAGER.**

No
Does the project have more than a total of 200 cubic yards of concrete?

No → **Project Manager contacts PCC Engineer**

PLANT INSPECTION
REGISTERED NEBRASKA PROFESSIONAL ENGINEER (CONSULTANT OR PRODUCER) MUST PERFORM PLANT CERTIFICATION FROM QC MANUAL -SECTION 3 FOUND AT [WWW.NRMCA.ORG](http://www.nrmca.org) INCLUDING OPTION "A" (FLEET INSPECTION)

At the time of plant inspection a minimum of 2 trucks will be spot checked by NDOR.

Ready Mix Plant

Stationary

Portable
Contact PCC engineer 4 weeks prior to performing ASTM C 94.

ASTM C 94 testing protocol is required on all dry batch and central mixers and must complete page 9 -Section 3.1. M&R Personnel will observe and note conformance to testing protocol (The testing protocol required for the ASTM C94 requirements for **Portable** batch plants are on pages 2-3 of this document).

SUBMIT PLANT CERTIFICATION CHECK LIST INCLUDING THE FOLLOWING TO THE PROJECT MANAGER:
Name of personnel performing inspection
District
Phone number

→ **SUBMIT CERTIFICATION TO THE PCC ENGINEER** → **RECORD IN SITE MANAGER.**

NOTE:

1. Stationary Plants/Truck Certifications are required every two years.
 - a. During plant certification, if a plant is using washwater in the concrete mix, the washwater shall be tested. See Item 12 of this policy for required testing.
2. Portable plants require certification a minimum of once a year
 - a. Contact PCC Engineer for a possible waiver if:
 - i. Portable plants remain at the same location longer than one year.

ASTM C94 REQUIREMENTS FOR PORTABLE BATCH PLANTS

1. ASTM C94 shall be performed on all portable batch plants
2. Contractor is responsible to have testing performed by ACI certified Grade I Technician
3. Test results shall be certified and submitted to the project manager/ QA for the ASTM C-94 testing along with the plant certification check list.
4. NDOR Materials and Research will have personnel observing the testing and noting conformance to the testing protocol.
5. Testing shall be performed the 1st week of concrete plant production.
6. All plants shall be allowed to perform regular paving operations at minimum of 60 sec. mix time or at the plant manufacturers' recommended mixing time, whichever is greater.
7. Samples will be taken at the mixer, immediately after the mix time is completed.
8. There will be a need for two samples one at 15% and one at 85% of the batch, in loaders, wheel barrows, a storage location etc. The samples must be protected to maintain the quality of the sample.
9. Slump and Air should be performed within 15 min. of each sample.
10. As a minimum, the following 5 tests will be performed and 4 must pass for the mixer to be approved at that specified mixing time.
 - a) Mass per cubic foot calculated to an air free basis, (1/4 cu. ft can be used)
 - b) Air Content, volume % of concrete
 - c) Slump
 - d) Coarse aggregate content, portion by mass of each sample retained on #4 sieve, %
 - e) Average compressive strength at 7 days for each sample, based on average strength of three test specimens, %

Optional – Mass per unit volume of air free mortar based on average for all comparative samples tested, % (If this is used in addition to the 5 above, a total of 5 of the 6 must pass the ASTM C94 tolerances)

Table A1.1 Requirements for Uniformity of Concrete (According to ASTM C94- Page 56-Annual Book of ASTM Standards. Vol. 05.02)

Test	Requirement, Expressed as Maximum permissible Difference in Results of Test of Samples taken from two Locations in the Concrete Batch
Mass per cubic foot calculated to an air-free basis, lb/ft ³	1.0
Air Content, volume % of concrete	1.0
Slump: If average Slump is 4 in or less, in If average slump is 4-6 in	1.0 1.5
Coarse Aggregate content, portion by mass of each sample retained on No. 4 sieve %	6.0
Mass per unit volume of air-free mortar ^A based on average for all comparative samples tested, %	1.6
Average compressive strength at 7 days for each sample, ^B based on average strength of all comparative test specimens, %	7.5 ^C

^A "Test for variability of Constituents in Concrete, "Designation 26, Bureau of Reclamation Concrete Manual, 7th Edition.⁴

^B Not less than 3 cylinders will be molded and tested from each of the samples

^C Approval of the mixer shall be tentative, pending results of the 7 day compressive strength

11. If a mixer performance test fails immediately, and the contractor wants to continue a performance test at that particular mixing time, two consecutive tests must pass 4 or 5 ASTM C-94 uniformity requirements

12. Washwater Testing

The following tests may be completed by NDOR to pre-approve washwater that is to be used in a concrete mix:

- ASTM C 1602 Mixing Water Used in the production of Hydraulic Cement Concrete
- ASTM C 1603 Measurement of Solids in water
- ASTM C 31 Making and curing Concrete Test Specimens in the Field
- ASTM C 39 Compressive Strength of Cylindrical Concrete Specimen
- ASTM C 191 Time of Setting of Hydraulic Cement by Vicat Needle.
- ASTM D 512 Chloride Ion in Water
- ASTM D 516 Sulfate Ion in Water
- NDR C 114 Chemical Analysis of Hydraulic Cement- Testing (Alkalinity)