

REVISIONS TO MATERIALS SAMPLING GUIDE July 1, 2010 Edition

Section 4 – Asphaltic Concrete Materials

Item 6: Crushed Mineral Aggregate or Chat for Microsurfacing

- a. Field Personnel: Updated the sampling requirement from 650 tons to 500 tons.

Section 13 – Granular Base, Granular Fill, Granular Backfill, Sandblanket, and MSE Walls

Item 8: Granular Backfill for Structures

- a. Field Personnel: Updated the sampling requirement from 50 cubic yards to 250 cubic yards.
- b. Central Lab: Updated the sampling requirement from 150 cubic yards to 750 cubic yards.

Item 9: Granular Subdrains

- a. Field Personnel: Updated the sampling requirement from 50 cubic yards to 250 cubic yards.
- b. Central Lab: Updated the sampling requirement from 40 pounds to 10 pounds.
- c. Central Lab: Updated the sampling requirement from 150 cubic yards to 750 cubic yards.
- d. Central Lab: Added the clarifying statement 'or fraction thereof.

Item 10: Granular Backfill for Pipe Underdrain

- a. Field Personnel: Updated the sampling requirement from 50 cubic yards to 250 cubic yards.
- b. Central Lab: Updated the sampling requirement from 150 cubic yards to 750 cubic yards.
- c. Central Lab: Added the clarifying statement 'or fraction thereof

Section 15 – Portland Cement Concrete for Pavement, Base Course, and Pavement Patching

Item 6: Concrete Test Cylinders

- a. Field Personnel: Updated the sampling requirement from four cylinders to two 6x12 or four 4x8 cylinders.

Section 16 – Portland Cement Concrete for Structures, Culverts, and Miscellaneous Construction

Item 8: Concrete Test Cylinders

- a. Field Personnel: Updated the sampling requirement from three cylinders to three 6x12 or four 4x8 cylinders.
- b. Field Personnel: Updated the requirements for the second set of cylinders from three cylinders to three 6x12 or four 4x8 cylinders.

Section 20 – Bridge Materials

Item 12: Elastomeric Bearings

Sub Item A:

- a. Added the contact phone number for Bridge Division, Steel Fabrication Unit

Item 12: Elastomeric Bearings

Sub Item B:

- a. Added the contact phone number for Bridge Division, Steel Fabrication Unit

Item 31: Structural Steel for Concrete Girder Bridges

Sub Item A:

- a. Replaced Project Manager with Engineer

Section 27 – Notes

Note 2: Asphaltic Oils, Performance Graded Binders, and Emulsified Asphalts

- a. Amended gender identify from 'his' to 'his/her'.
- b. Added this clarifying statement 'A Bill of Lading may serve as a certificate of compliance, provided it contains all the required information.'
- c. Added the form number for the Certified Sample Registration, Form Number DR184.
- d. Removed the requirement to contact M&R should the Certified Sample Registration form not be available.
- e. Updated the sampling locations to include 'or from the storage tank itself supplying material to that line.'

Note 6: Portland Cement Concrete

- a. Removed this statement: 'The minimum frequency for determining the yield and air content of plastic concrete and the gradation of the aggregate used is based on an average daily production facility. It is difficult, however, to apply this rate of testing to all phases of concrete construction. In some instances, for adequate control, it may be necessary to perform the required tests more often than the minimum frequency specified. In any case, the frequency control tests should be based in part upon the rate of concrete production and in part upon maintaining proper mix control.'
- b. Added this statement: 'The minimum frequency for determining the yield, air content and gradation of aggregates used is based on the average daily production. In some instances, for adequate control, it may be necessary to perform the required test for often.'
- c. Added this statement: 'Concrete Cylinders Size – 4x8 inch and 6x12 inch cylinder molds may be used on all projects. When testing 4x8 cylinders, 2 cylinders will be averaged for one test result. Starting January 1, 2011, the Department will accept 4x8 cylinders exclusively, and 6x12 cylinders will no longer be accepted.'
- d. Concrete Cylinders for Pavement:
 - a. Updated this requirement from a set of 'four cylinders' to a set of two '6x12 or four 4x8 cylinders.
 - b. Added this statement: 'Starting January 1, 2011, the Department will accept 4x8 cylinders exclusively, and 6x12 cylinders will no longer be accepted.'
 - c. Removed this statement: 'Unless otherwise required cylinders shall be tested at 7, 10, 14, and 28 days.'
 - d. Added this statement: 'The Project Manager may request a change in the age of testing providing there are two cylinders for the 28-day strength. Extra cylinders shall be made, in addition to, the required number if early testing is requested by the contractor.'
- e. Concrete Cylinders for Structures:

- a. Updated this requirement from a set of 'three cylinders' to a set of three '6x12 or four 4x8 cylinders.'
- b. Updated the requirement for additional cylinders to indicate a set of three '6x12 or four 4x8 cylinders'.
- c. Added this statement: 'If 6x12 cylinders are used, one cylinder will be tested for the 7-day strength, and two cylinders will be averaged for the 28-day strength. If 4x8 cylinders are used, the 7-day and 28-day strength will be the average of two cylinders tested.'
- d. Added this statement: 'Extra cylinders shall be made, in addition to, the required number if early testing is requested by the contractor.'
- e. Added this statement: 'Starting January 1, 2011, the Department will accept 4x8 cylinders exclusively, and 6x12 cylinders will no longer be accepted.'

Note 8: Liquid Curing Compounds

- a. Added this statement: 'Upon passing the tests, the cure compound is approved for one year from the day of testing.'
- b. Removed this statement: 'personnel through the'
- c. Removed extraneous 'and' from this statement: 'Curing compound lot numbers not found must be sampled, tested and approved before being used.'

Note 14: Steel Bearing Piling, Steel Sheet Piling and Steel Shells for Cast-in-Place Piling

- a. Removed this statement: 'where the chemical analysis will be checked and approved and copies distributed. The Project Manager shall not accept the piling for use until he has received copies of the approved mill test reports from the Materials and research Division, or approval to use this material.'

Section 28 – Quality Assurance Program for Construction

Section 3: Acceptance Program:

- a. Dispute Resolution System:
 - a. Added this clarifying statement: 'On every sample, NDOR will retain enough material to conduct a dispute resolution on the original sample material. If NDOR doesn't have enough original material to sample, NDOR reserves the right to test from in-place material or other means of investigation.'

Appendix A: Sampling and testing Personnel Qualification Program:

- a. Qualification Procedure:
 - a. Item A.4.2.1: Added this clarifying statement: 'Newly hired and temporary NDOR employees may obtain provisional certification issued by NDOR Quality Assurance Manager, to be qualified to conduct limited sample and testing as Asphalt, PCC, or Soils/Aggregate Field Technician certification. The provisional certification will permit the employee to perform the material testing while within sight and sound of a certified field or qualified laboratory technician. An employee will be able to perform testing under the provisional certification for a maximum of one construction season.'
 - b. Removed this statement: 'Temporary summer employees, who are students enrolled in post secondary education, will be allowed to work a total of three summers before needing to become fully certified.'

Appendix D: Acceptable Tolerance Limits For Independent Assurance Split or Proficiency Samples

- a. Asphalt Concrete (Superpave)

- c. Air Voids, Split Sample Tolerance: Update the Visual Observation from ± 0.5 to 1.0%.
- b. Asphalt Concrete (Conventional)
 - d. Air Voids, Split Sample Tolerance: Update the Visual Observation from ± 0.5 to 1.0%.

Policy 4 – Acceptance Policy for Cement & Blended Cements

Approved Products List

- a. Item 2a: Remove SubItem 1: 'Tricalcium aluminate (C_3A) cannot exceed 8% if the cement is to qualify as a type II.'
- b. Item 2a: Remove SubItem 2: 'There is no C_3A limit for type 1 cement.'

Policy 7 – Policy for Certification of Ready Mix Plants

Item 1:

- a. Added 'wet' to clearly define the batch plant.

Item 5:

- a. Removed 'the 1st week'.
- b. Added 'within the first three days of the concrete plant's production.'

Item 12:

- a. Updated 'ASTM C' 1602 to 'NDR'
- b. Updated ASTM C 39 to ASTM C 109
- c. Removed 'Cylindrical Concrete Specimen'
- d. Added 'Hydraulic Cement Mortar'
- e. Updated 'ASTM' 512 to 'NDR D'
- f. Updated 'ASTM D 516' to 'NDR T 290'
- g. Removed Sulfate Ion in Water
- h. Added 'Determining Water – Soluble Ion in Soil Method A'