METHODS OF SAMPLING AND TESTING
MT 609-21
FIELD NUMBERING OF CONCRETE CYLINDERS
(Montana Method)

1 Scope

1.1 The procedure outlined in this method has been adopted in order to establish a uniform, statewide numbering system for concrete test specimens and entry of specimens in MDT's SiteManager and AASHTOWare systems.

2 Terminology

2.1 Definitions

2.1.1 *Lot* – A single day's pour or every 200 yd^3 (150 m^3) of concrete poured, whichever is less, excluding Class Pave. A lot of Class Pave is a single day's pour or every 1,000 yd^3 (750 m^3) of concrete poured, whichever is less.

2.2.2 *Test* – A set of four (4) cylinders for Compressive Strength testing.

3 Specimen Number Procedure

3.1 Each concrete cylinder for an entire project will have its own unique specimen number.

3.2 Specimen numbers are to contain the Lot# (L), the Test# (T), and the Cylinder# in this format: L#T#_Cylinder# (e.g., L4T1_1, L4T1_2, etc). Cylinder numbers are to be in continuous consecutive order for each class of concrete for the entire project.

3.3 Example

3.3.1 Project A has a 24 yd^3 pour on day 1. Cylinders from this pour would be Lot 1 and Specimen Numbers for day 1 would be L1T1_1-4.

3.3.2 Project A has a much larger pour on day 2. The first 200 yd^3 poured would be Lot 2. Assuming 4 Tests in Lot 2, Lot 2 will have 16 cylinders. Specimen Numbers for Lot 2 would be L2T1_5-8, L2T2_9-12, L2T3_13-16, and L2T4_17-20.

Note 1 – A Cylinder# for Compressive Strength testing for a specific class of concrete should never be repeated. If 300 cylinders are cast for a specific class of concrete for a project, the cylinders should be numbered 1 through 300.

4 Creating Sample Records

4.1 Generate one (1) Sample Record for each Lot of cylinders cast. The Sample Record can contain as many as four Tests (four (4) sets of four (4) cylinders) for Compressive Strength testing. A unique Sample Record is not required for each Test that is in the same Lot.

4.2 SiteManager Sample Records

Enter the following data to generate a Sample Record:

a. Sample ID: Assigned by Site Manager
b. Sample Date: The date the concrete was sampled in the field (not the logged date)
c. Sample Type: Project Acceptance
d. Acceptance Method: Test Results
e. Material Code: Concrete Class Code (i.e., General, Pave, Pre, SCC, Deck, etc.)

f. Witnessed by: Self explanatory
g. Producer/Supplier: Supplier of the concrete (e.g., 99-FOSSUMR-SUPP for Fossum Ready Mix)
h. QPL/PIT/MILL: Source of aggregate (e.g., 42-031010 for Fossum Ready Mix (Belzer) pit)
i. Qualified Product Name: Leave blank
j. District/Area: Self explanatory
k. Contract Descr: Contract ID and Job Name
l. Specimen Number(s): As described in Section 3 (e.g., L1T1-4_1-16)
m. Intended Use: Describe use and location sample represents

Save Sample Record.

4.2.1 Navigate to the Addt'l Sample Data tab. Enter data into Specimen Number(s) field, if blank. The Specimen Number(s) should match the Specimen Number(s) on the Basic Sample Data tab. Enter Control Type "Lot Number" then enter the Lot# in the Number box and Save.

4.2.2 Navigate to the Contract tab and attach appropriate Contract Number. Enter the Represented Quantity for the item associated with that sample (e.g. yd^3 of concrete or yd^2 of sidewalk) and Save.

4.2.3 Navigate to the Tests tab. Attach a Concrete Properties test template for each sample tested for concrete properties in this Lot, whether or not cylinders were tested. The Sample Test Number (Sample Test Nbr) should match the Test# entered in the Specimen Number box on the Basic Sample Data tab when applicable. Enter the Received Date, Actual Start Date, and Actual Completion Date in the fields displayed in the bottom right hand corner. These dates need to be filled in by the inspector for each test template attached and should be the same date as the Sample Date shown on the Basic Sample Data tab.

Note 2 – For each test template, ensure that the User ID of the personnel actually performing the testing is listed as the Tester.

4.3 AASHTOWare Sample Records

Follow the procedures outlined in the "Creating Concrete Sample Records" cheat sheet located on the intranet:
https://www.mdt.mt.gov/other/webdata/external/css/aashtoware-cm/Cheat-Sheets/Creating-Concrete-Sample-Records.pdf

5 Split Loads

5.1 On multiple structure jobs where one load of concrete is split and placed on more than one structure on the project, one set of test specimens will suffice, providing the split load of concrete is not altered in any way such as delaying successive pours, introducing additional water into the mix, etc.

6 Marking Sides of Cylinder

6.1 All identifying markings on concrete cylinders shall be placed on the sides of the cylinder instead of, or in addition to, markings being placed on the ends. Markings on the cylinders are to include at a minimum:

- Sample ID assigned by SiteManager or AASHTOWare.
- Sample Date (the date the concrete was sampled in the field – not the logged date)
- Specimen Number as described in Section 3 (optional – for field/district use).

Note 3 – If necessary, concrete cylinders, upon arriving at the Materials Bureau, are immediately capped on both ends. If field personnel place the identifying numbers on the end of the cylinders only, it is necessary for the Materials Bureau to transfer the identifying numbers to the side of the cylinder before it is capped, as the original information will be covered by the caps. Transferring information increases the potential for errors.