# METHODS OF SAMPLING AND TESTING
# MT 302-14
# SAMPLING AND TESTING BITUMINOUS MATERIAL
# (*Montana Method*)

## 1 Scope

1.1 This method covers the procedure for sampling and testing bituminous materials, submitting samples, retaining samples, precautions to be used during sampling, designating who is to take the sample and the recording of information pertinent to the acceptance of bituminous materials.

## 2 Referenced Documents

***AASHTO***
R 66 Sampling Asphalt Materials

***ASTM***
D140 Standard Practice for Sampling Bituminous Materials

***MT Materials Manual***
MT 601 Material Sampling, Testing and Acceptance Guide
MT 610 Numbering Subgrade Material, Surfacing Material, Bituminous Treated Material, and Liquid Asphalt

## 3 Inspection

3.1 The Department will witness the taking of any or all acceptance samples by the Contractor or designated personnel.

## 4 Sampling Procedure

4.1 *Importance of proper sampling* - Sampling is equally as important as testing. Take every precaution to obtain samples that show the true nature and condition of the materials they represent. Test results are valuable only when the tests are performed on representative samples. Take samples in accordance with the following procedures, so there will be no question as to validity. This is very important in case of a test failure, which may be the basis for rejection of the material.

4.2 Refer to MT 601 for sample size and container type. Use containers furnished by the Department. Do not use second-hand containers, any containers washed or rinsed with solvents, or any containers provided by the contractor. (*Note 1*)

*Note 1 – Use metal containers for cut-back asphalt and asphalt cement. Use plastic containers for asphalt emulsions only.*

*4.2.1* Per 402 Specification, all truck tanks, trailer tanks, or other conveyances containing bituminous materials must be equipped with a sampling valve not less than ⅜-inch or more than ¾-inch in diameter. These valves may be installed either through the tank's bulkhead at centerline or on the discharge line between the truck unloading pipe and the hose. Sample the contents of railroad tank cars and truck transports, not equipped with a sampling valve, from the pressure side of the unloading pump.

*4.2.2* Discharge one gallon or sufficient volume of material to clear the sampling device prior to taking the samples. This step is important to ensure a representative and uniform sample is taken.

*4.2.3* Take the duplicate samples consecutively with a minimum lapse of time from the same tank or trailer.

*Note 2 – Sample all emulsion shipments, regardless of the size of the shipment, within a reasonable time as to not compromise the sample. If emulsion sample has been diluted, note this on the sample record. Protect the emulsions samples from freezing. Re-sample when the material is stored without agitation for three or more days before use.*

*4.2.4* Leave the screw caps loose until the contents cool so the contraction of the asphalt will not collapse the containers. Remove any spillage on the outside of the container with a clean, dry cloth, cotton waste or paper towels. Do not use solvents (diesel fuel, gasoline, etc.) for this purpose.

*Note 3 – For other sampling methods, refer to AASHTO R 66 and ASTM D140.*

## 5 Submitting, Reporting and Testing of Samples

5.1 *Submitting*

*5.1.1* After samples are taken, immediately forward to the Materials Bureau for testing.

5.2 *Reporting*

*5.2.1* Create an AASHTOWare Sample Record to submit samples.

*5.2.2* Refer to MT 610 for numbering the bituminous material samples.

5.3 *Testing*

*5.3.1* The Materials Bureau will perform tests for all specification requirements on samples selected at random for each project.

*5.3.2* The Materials Bureau will immediately notify the Project Manager, who in turn will notify the Prime Contractor, when the result of a series of tests is not within the specification limits.

*5.3.3* In the event of a failure, refer to applicable Specification.

## 6 Certification of Shipments

6.1 Ensure suppliers of bituminous materials furnish the Project Manager or their representative, one copy of the original bill of lading or invoice and a Certificate of Compliance. Ensure this documentation accompanies each tank car, truck-trailer tank, or other individual conveyance of bituminous materials shipped, or hauled to the project. This certificate, signed by a supplier's responsible representative, attests to the fact that the bituminous material complies with Department specifications for the type and grade of material represented and the conveyance was inspected and found to be free of contaminating material.

6.2 The Certificate of Compliance is the basis for tentative acceptance and use of the material. Do not allow the shipment to be tentatively accepted or incorporated in the work without the receipt of the certification. It may be included on the bill of lading or invoice or it may be a separate document attached to the bill of lading. The Project Manager will retain the certificate and bill of lading in the project files and digital files for record purposes.