

State of Nevada  
Department of Transportation  
Materials Division

## **METHOD OF TEST FOR SAMPLING BITUMINOUS MATERIAL**

### **SCOPE**

This method applies to sampling bituminous materials at the point of manufacture, storage, or delivery. Samples may be taken from tanks, vehicles, or containers used for storage or shipping of bituminous materials.

### **SIGNIFICANCE**

Sampling is as important as testing and every precaution shall be taken to obtain samples that will show the true nature and condition of the materials. Samples are taken to represent an average of the bulk of the materials sampled.

### **SELECTION OF SAMPLES**

Samples shall be taken in accordance with Section 106.04 of the Standard Specifications.

### **SIZE OF SAMPLES**

The sample size of asphalt cement and liquid asphalt refinery samples submitted for mix designs shall be as specified in Section 401.02.02 of the Standard Specifications. The sample size of emulsified asphalt refinery samples submitted for pre-approval shall be 3.75 L (1 gal). The sample size of asphalt cement, liquid asphalt, and emulsion samples submitted for acceptance testing shall be 1 L (1 qt), unless otherwise specified. Sample containers shall be filled to within 25 to 50 mm (1 to 2 in.) of the top of the container.

### **CONTAINERS**

1. Asphalt Cements - Wide mouth metal paint-can type containers.
2. Liquid Asphalts (MC-70, MC-250, MC-800, SC-800, etc.) - Metal cans with screw caps having an inside diameter of approximately 45 mm (1 3/4 in.).
3. Emulsified Asphalts - Wide mouth plastic bottles with screw caps.

## **PROTECTION AND PRESERVATION OF SAMPLES**

1. All sample containers shall be new, clean and dry. Sample containers shall not be washed or rinsed with solvents. Sample containers shall not be wiped with an oily or solvent-saturated cloth. Do not use sample containers if they contain evidence of solder flux.
2. Immediately after filling, the lid shall be tightly affixed to the container. Care shall be taken to prevent contamination of samples by solvents, other types of bituminous materials, water, dust, or any other substance foreign to the material being sampled.
3. The filled sample container shall not be submerged in solvent, nor shall it be wiped with a solvent-saturated cloth. If cleaning is necessary, use a clean dry cloth.
4. Samples of emulsions shall be protected from freezing.
5. Transferring samples from one container to another shall not be permitted except where required by the sampling procedure. Characteristics of materials could be altered during transfer. Contamination is also a possibility.
6. After filling, installing the lids, and cleaning the containers (if necessary), the transmittal shall be completely and legibly filled out, signed, and affixed to the sample container. All samples will use the Transmittal for Asphalt Samples, NDOT Form No. 020-016. Masking tape shall be used to affix the transmittal to the container. Hot samples should be allowed to cool sufficiently before affixing the transmittal so that the tape will not melt to the can. In case of inclement weather, the transmittal will be sealed in a plastic envelope for protection. Strapping (fiber) tape, scotch tape, or duct tape should not be used for this purpose as they can damage the transmittal upon removal from the container.
7. Samples of all bituminous materials shall be forwarded to the Materials Division for testing as soon as possible.

## **SAMPLING PROCEDURES**

Sampling will be performed by the contractor, asphalt supplier, shipper, or their representative. NDOT personnel should observe the procedure to ensure conformance to this specification. Sample containers will be provided by NDOT.

### **Sampling from a sample valve in a storage tank, vehicle tank, railroad tank car, or distributor truck:**

1. Sample valves shall conform to AASHTO T 40.
2. Sample valves shall provide a sample from the approximate midpoint of the load.
3. Before the sample is taken, approximately 4 L (1 gal) of material will be drawn from the valve and discarded in order to ensure a representative sample.

**Sampling from transfer lines:**

1. Sampling will be accomplished by bleeding through a sample valve or drain-cock in the transfer line.
2. Sample valves shall conform to AASHTO T 40.
3. Before the sample is taken, approximately 4 L (1 gal) of material will be drawn from the valve and discarded in order to ensure a representative sample.
4. If sampling a vehicle tank during the unloading process, take the sample after one-third of the load has been removed and before two-thirds of the load has been removed.
5. A detachable fitting, containing a sampling valve, may be used on the truck outlet in front of the discharge. When the detachable fitting is used continuously for sampling the same product, it shall be allowed to drain between shipments while being protected from dust or accumulation of dirt, but shall not be cleaned with solvents. Threads of the collar and opposite end of the fitting shall be wiped clean with a cloth while the metal is warm and the bituminous material is still in a liquid condition. When the detachable fitting is used alternately for the sampling of different products, it shall be washed thoroughly with an appropriate solvent, followed by a second wash with an appropriate volatile solvent. The volatile solvent shall be removed by a warm air current or by drying in an oven before the next sampling.

**Sampling from a bituminous hot-plant:**

1. Sampling will be accomplished by bleeding through a sample valve or drain-cock in the transfer line.
2. Sample valves shall conform to AASHTO T 40.
3. Before the sample is taken, approximately 4 L (1 gal) of material will be drawn from the valve and discarded in order to ensure a representative sample.
4. Sampling will conform to the requirements of Section 106.04 of the Standard Specifications.

**Sampling by the dip method:**

1. This method is not suitable for asphalt cements.
2. Samples will be taken with an NDOT approved sampling device.
3. Samples shall be taken from the approximate midpoint of the load by lowering the approved sampling device into the bituminous material and opening the device at the appropriate level.
4. After sampling, the bituminous material will be transferred to an appropriate container as specified in the CONTAINERS section above.
5. The contractor, supplier, shipper, or their representative shall provide, handle and clean the sampling device. The Department will accept no responsibility for the cleanliness of the sampling device or for the representative nature of the sample.

6. A separate sampling device shall be provided for each delivery truck or trailer that is not equipped with a sampling valve.
7. Waste material, solvents, and residues from cleaning sampling devices shall not be deposited on state property.

**Sampling by the spray bar method:**

1. This method may be used for emulsions and liquid asphalts when it is not feasible to sample with a sample valve.
2. Samples shall be taken from a nozzle in the spray bar following complete circulation of the material. Take the sample after one-third of the load has been removed and before two-thirds of the load has been removed.