

State of Nevada
Department of Transportation
Materials Division

SAMPLING BITUMINOUS MATERIALS

1. 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.

B. 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.

C. SELECTION OF SAMPLES

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

D. 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 (one gallon). The sample size of all liquid bituminous materials submitted for acceptance testing shall be one liter (one quart), unless otherwise specified. Sample containers shall be filled to within 25 to 50 mm (1 to 2 in.) of the top of the container.

E. CONTAINERS

1. Asphalt Cements (Conventional asphalts, polymer modified asphalts, performance graded asphalts, etc.) - 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.

6. 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. Refinery samples will use the Transmittal for Test Samples, NDOT Form 020-018. Acceptance samples will use the Transmittal for Asphalt Samples, NDOT Form 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. Emulsions are time dependant and must be tested within 30 days of the sample date.

G. SAMPLING PROCEDURES

Sampling will be performed by the contractor, asphalt supplier, or their representatives. 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 T40.
2. Sample valves shall provide a sample from the approximate midpoint of the load.
3. Before the sample is taken, approximately 4 liters (1 gallon) 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 T40
3. Before the sample is taken, approximately 4 liters (1 gallon) 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 diesel oil, 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 T40

3. Before the sample is taken, approximately 4 liters (1 gallon) 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. Sampling will conform to the requirements of Section 408.02.02 of the Standard Specifications.
3. Samples shall be taken from the approximate midpoint of the load by lowering an 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 Section E, Containers.

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.

H. SAFETY PRECAUTION

1. Gauntlet style heat-resistant gloves and suitable eye protection shall be worn while sampling hot bituminous products and while sealing containers.
2. There shall be no smoking during sampling operations.

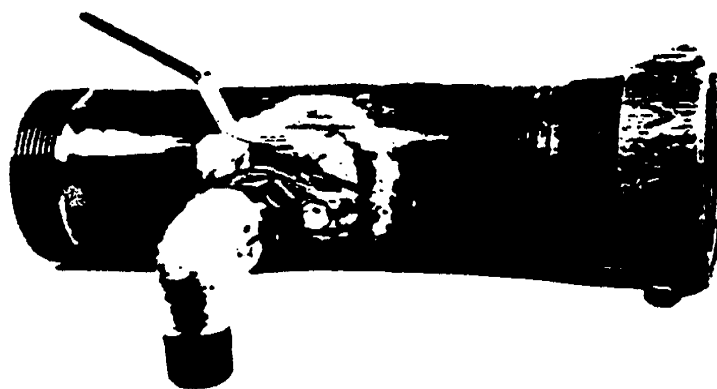
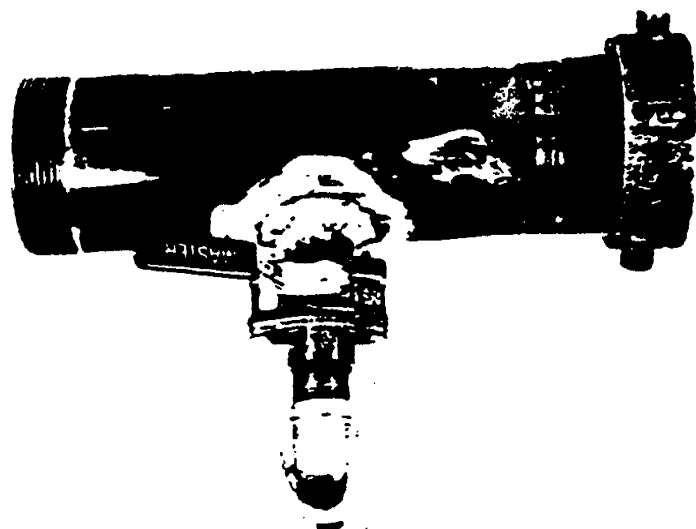


Figure 1