

The background image shows a construction site. In the foreground, a worker wearing a dark jacket and a hard hat is working in a trench. The worker is using a tool, possibly a shovel or a similar implement, to work on the ground. The trench is filled with a dark material, likely asphalt or a similar paving material. In the background, there are trees and a building with a sign that says "KISS". The overall scene is outdoors and appears to be a road construction project.

TACK COAT

TEST DATA, SPECS & SAMPLING PRACTICES

Steve Brakeall, 443-572-5120

LAB TESTING

Residue, Viscosity, Sieve

	CRS-1	CSS-1h
2015 Totals*	165	56
Clogged Sieve	53	31
Viscosity	15	4
Residue	11	3

*26 non-standard (non-tracking, MS/SS applications)

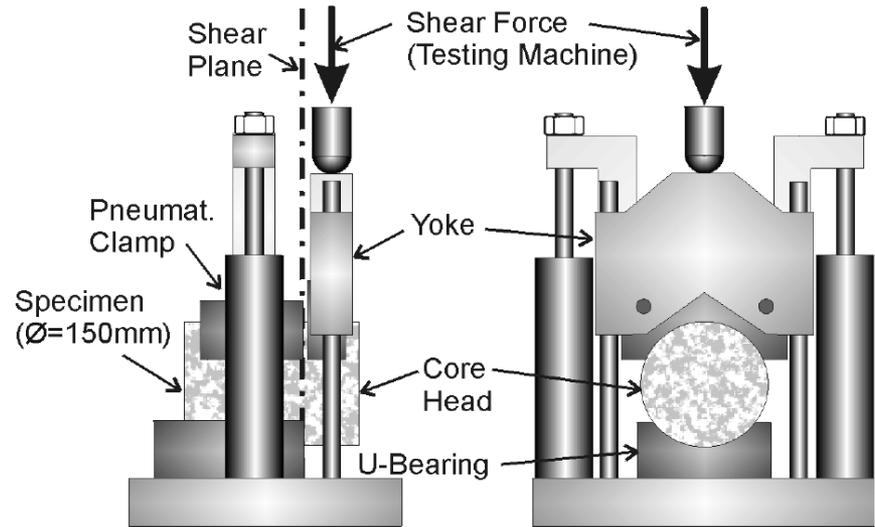
Significance of a Failing Tack Coat test?

Residue?

Viscosity?

Sieve?

Asphalt Tack Bond Shear Strength Apparatus



- Measures shear strength of tack coat between two asphalt layers
- Fixture is used in a Marshall Test Load Frame
- Steel frame holds a fixed and a moveable shear plate

Sampling Practices

Documentation Types

CMT 88
REV. 06/12/2004

STATE OF MARYLAND
STATE HIGHWAY ADMINISTRATION
MATERIALS AND TECHNOLOGY

GENERAL MATERIALS SAMPLE

Original 48
Acceptance _____
I.A.S.T. _____
Other _____

Date Sampled: 3/8/12 Lab No: 212017 Project Sample No: Start-up
Type of Material: CRS-1 Quantity Represented: 1700 gal
Contract No: W0220B51 F.A.P. No: _____
Item No: _____ Type of Construction: TACK coat for HMA mixes
Sample Taken From: Truck #908 Plant No: #181 & #185 Source: _____ Job Site: _____
Produced By: Hammaker East, LTD Trade Name: Hammaker
Source of Supply: George & Lynch Dover De
Shipped From: 3450 Asiatic Ave. Balt. Md. 21226 Lot No: 3-12 Tank No: 17
Size of Sample: 1/2 gal Sampled By: Clad Delgado Witnessed By: R.P. Umetsu #787
Remarks: TACK 113243
Return Original Form To: FAE Regional Laboratory

FOR LABORATORY USE ONLY		
Date Received in Lab: _____	In Testing Unit: _____	Lab No: _____
Date Put Under Test: _____	Date Test Completed: _____	Tested By: _____
Test Cost: _____	Approved By: _____	Recorded By: _____

LABORATORY TEST RESULTS

Hammaker East, Ltd.
A subsidiary of Russel Standard Corp.
3450 Asiatic Ave. Phone: 410-355-6363
Baltimore, Md, 21226 Fax: 410-355-6364

HE

Certificate of Analysis

Grade: CRS-1 Lot: 3-12 Tank: 17 Lot Gal: 29

Residue From Distillation: _____
Penetration, 77°F, 100g, 5 Sec _____
Ductility, 4C or 25C, 5cm/minute, cm _____
Softening Point, Ring & Ball, Degrees C, (vendor Results) _____
Elastic Recovery @ 10°C AASHTO T301 _____
Viscosity, SSF @ 122°F _____
Drumability, 35 ml 0.8% sodium dicetyl sulfosuccinate, % _____
Classification Test _____
Storage Stability, 24 hr, % _____
Particle Charge _____
Sieve Test, % _____
Oil Distillate, by volume of emulsion, % _____

The Certificate of Analysis exclusively certifies material manufactured and stored on location at Hammaker East - Baltimore plant. Third party distribution of this certification is unauthorized as Hammaker East claims no liability for material received through third party brokers. The referenced material is certified to meet DC, DE, MD, PA, VA, and WV D.O.T. Specifications.

Retinery Representative: K. Hays Date: 2-22-12

HAMMAKER EAST, LTD.
Baltimore Plant
3450 Asiatic Ave
Baltimore, MD 21228

Plant Manager
Tom Randall
Office: 410-355-6363
Fax: 410-355-6364

**TRUCK BILL OF LADING
DELIVERY RECEIPT AND INVOICE**

To: George & Lynch, Inc. BOL#: 410003112

1425 Destination: _____ Date: 3/5/2012
FLT-436 FLT-436 Time In: 5:30 am
168 P.O.#: _____ Time Out: 6:08 am
BRIAN

I CERTIFY THAT THIS TRAILER IS FREE OF CONTAMINATING MATERIAL UPON LOADING
Product on Trailer Prior to loading

Product Description
30.1001 CRS-1

**In Case of Emergency:
1-800-424-9300 CHEMTREC, IF DC USE 1-202-483-7616**

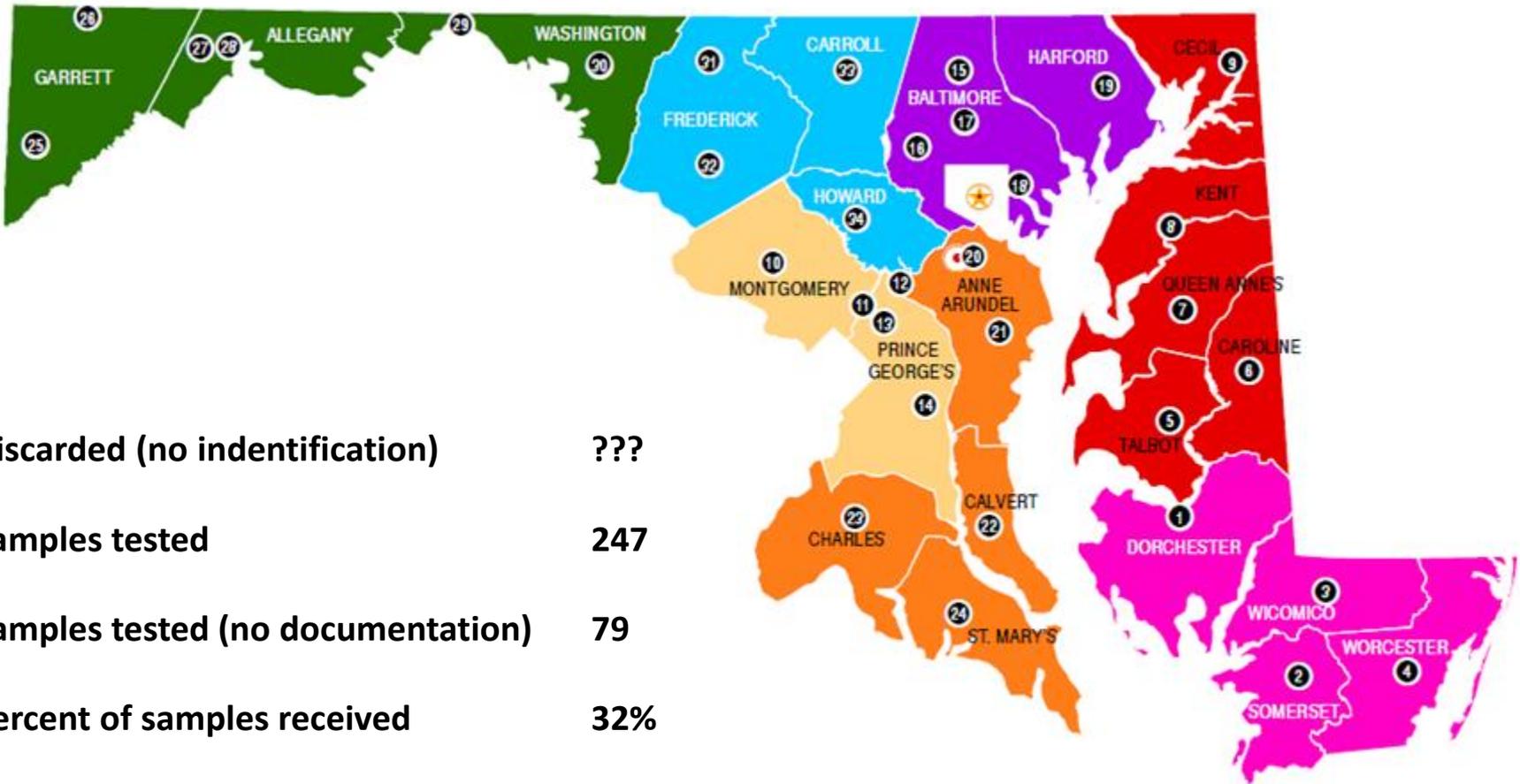
Mat.	Qty	Rate	Amount
Mat.	5,398.88 GAL		
Freight			
Tax	MDSLS		
Total			

The material referenced above meets **PADOT** specifications published in the 408 section 702 and Bulletin #25
The Material Referenced above is certified to meet DC, DE, MD, PA, VA and WV D.O.T.
Specifications for performance grade asphalt emulsions, AASHTO Materials Part II 14th Edition

Gross: 74340 Tare: 29200 Net Lbs: 45140 Total Net (GAL): 5,398.88

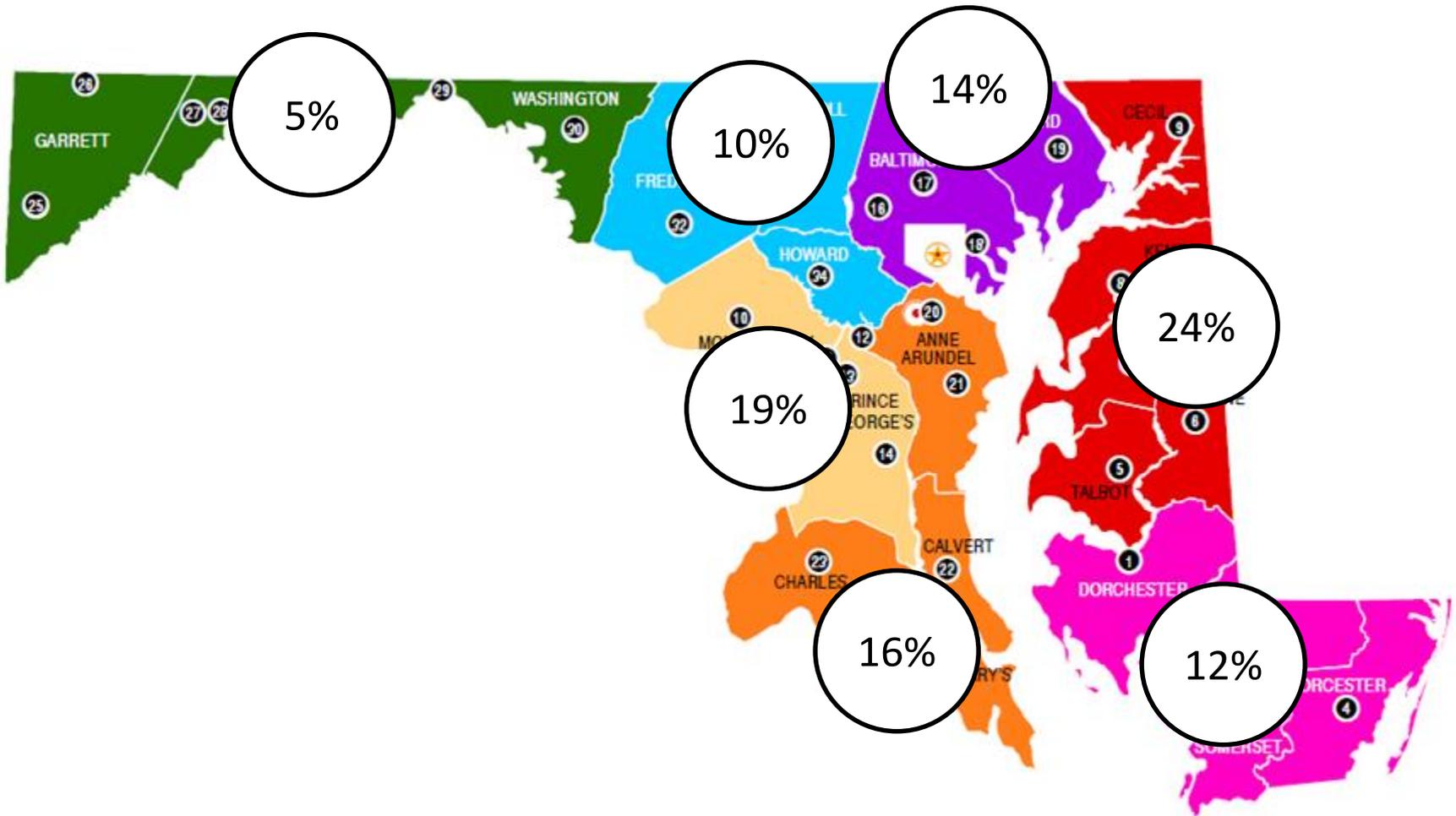
I certify that this material has been checked as to the compatibility with job aggregate and was loaded into above designated trailer on date and firm stated and that this trailer contained no foreign matter that could contaminate the above described material when loaded.
Warranty - All products manufactured by use are warranted to be first class materials and free from defects in material and workmanship. We make no warranty, expressed or implied, as to suitability of any of our products for any particular use, and we shall not be subject to liability from any damages resulting from their use in operation not under our direct control.

Documentation Not Received With Sample (Form 88, COA, BOL)



Discarded (no identification)	???
Samples tested	247
Samples tested (no documentation)	79
Percent of samples received	32%

Documentation Not Received With Sample (Form 88, COA, BOL)



Recommend Approval: _____ Team Leader Date _____ Division Chief Date	Maryland Department of Transportation State Highway Administration Office of Materials Technology MARYLAND STANDARD METHOD OF TESTS	
Approved: _____ Director Date	EMULSIFIED ASPHALT SUPPLIERS AND HAULERS	MSMT 460

SCOPE:

This method specifies the requirements and procedures for the certification of emulsified asphalt products and the Quality Control Plans (QCP) of emulsified asphalt Suppliers. These requirements and procedures shall apply to materials that meet Maryland specifications for emulsions, to the facility that manufactures the emulsion, and to terminals or locations where the emulsions may be modified. These provisions also apply to the paving contractor after delivery of the emulsion for use on Administration projects.

REFERENCE DOCUMENTS:

Sections 504, 904, 923

M 140 Standard Specification for Emulsified Asphalt

M 208 Standard Specification for Cationic Emulsified Asphalt

M 316 Standard Specification for Polymer-Modified Cationic Emulsified Asphalt

PP 71 Standard Practice for Certifying Suppliers of Emulsified Asphalt

R 18 Standard Practice for Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories

R 66 Standard Practice for Sampling Asphalt Materials

T 59 Standard Method of Test for Emulsified Asphalts

TERMINOLOGY:

Emulsion An asphalt binder that is emulsified with water and an emulsifying agent in a colloid mill.

Supplier One who produces the final product or who makes the blend or modification that alters the properties of the emulsified product specified in M 140, M 208, or M 316. A Supplier is a refinery, terminal, or paving contractor.

- If no modification is made to the emulsified asphalt after its initial production at the refinery or terminal, the refinery or terminal is the supplier and must provide the certification.

- If any modifications are made to the emulsified asphalt at the terminal, the terminal is a manufacturing site and considered the supplier. As a manufacturing site, the terminal must provide the certification.
- If any modification, blending, or blending of emulsified asphalt from different sources is made at the paving contractor's facility or at the job site, the paving contractor will be considered the supplier and must provide the certification.

Hauler A hauler is defined as one who transports emulsified asphalt via either of the following:

- Tanker – vehicle that is used to transport the emulsion to the paving contractor's facility
- ~~Distributor – vehicle that is used to apply the emulsion at the jobsite~~

SAMPLING PROCEDURES:

Obtain all test samples in accordance with R 66.

TESTING REQUIREMENTS:

All certification testing required for this standard shall be performed by a laboratory accredited by the AASHTO Materials Reference Laboratory (AMRL). Identify satellite laboratories that perform the required testing in the Quality Control Plan (QCP) as approved by the Administration.

SUPPLIER'S CERTIFICATION REQUIREMENTS:

Suppliers shall have their products listed on the Qualified Products List (QPL) before any emulsion shipments are made to an Administration project and must meet the requirements of M140, M 208 or M 316.

The Supplier shall allow the Administration to visit the production and/or shipping site to observe its quality control activities, to inspect the facilities, and to obtain samples for testing.

SUPPLIER'S QUALITY CONTROL PLAN (MINIMUM REQUIREMENTS):

The Supplier's QCP shall identify the following:

1. Facility type (refinery, terminal, contractor)

Standard Practice for

Sampling Asphalt Materials

AASHTO Designation: R 66-15¹



1. SCOPE

- 1.1. This standard applies to sampling asphalt materials at production facilities, at storage facilities, or at the point of delivery. Samples may be taken from tanks, stockpiles, vehicles, or containers used for the storage or shipping of asphalt materials.
- 1.2. The values stated in SI units are to be regarded as the standard. The inch-pound units are presented in parentheses for informational purposes and may not be exact equivalents.
- 1.3. *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. SIGNIFICANCE AND USE

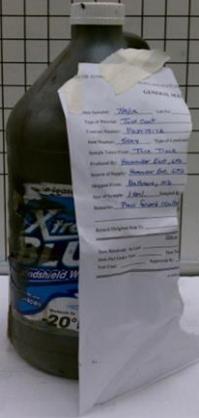
- 2.1. Sampling is a critical step in determining the quality of the material being sampled. Care shall be exercised to ensure that samples are representative of the material in the line or vessel being sampled.
 - 2.1.1. Alterations of the materials being sampled, such as the use of filters or screens in the sampling devices or nozzles, shall not occur because such alterations render the sample to not be representative of the material remaining in the line or vessel being sampled.

3. INTERFERENCES

- 3.1. Contamination of samples can occur because of residual amounts of other types and grades of asphalt remaining in the line or vessel being sampled. Contamination can also occur due to the presence of cleaning agents, either in the line or vessel being sampled or remaining on the sampling devices used.

4. SIZE OF SAMPLES

- 4.1. *The minimum sample size for liquid asphalt material shall be as follows:*
 - 4.1.1. 1 L (1 qt) of asphalt binder, or
 - 4.1.2. 4 L (1 gal) of emulsified asphalt.
- 4.2. *The sample size of semisolid or solid materials shall be as follows:*
 - 4.2.1. From barrels, drums, or cakes—1 to 2 kg (2 to 3 lb).



5.

CONTAINERS

5.1.

Type of Containers:

5.1.1.

Containers for liquid asphalt materials, except emulsified asphalt, shall be double-seal friction-top cans, square cans with screw tops, or small-mouth cans with screw caps.

5.1.2.

Containers for emulsified asphalt samples shall be plastic wide-mouth jars or bottles with screw caps.

5.2.

Size of Containers:

5.2.1.

The size of the container shall correspond to the required amount of sample.

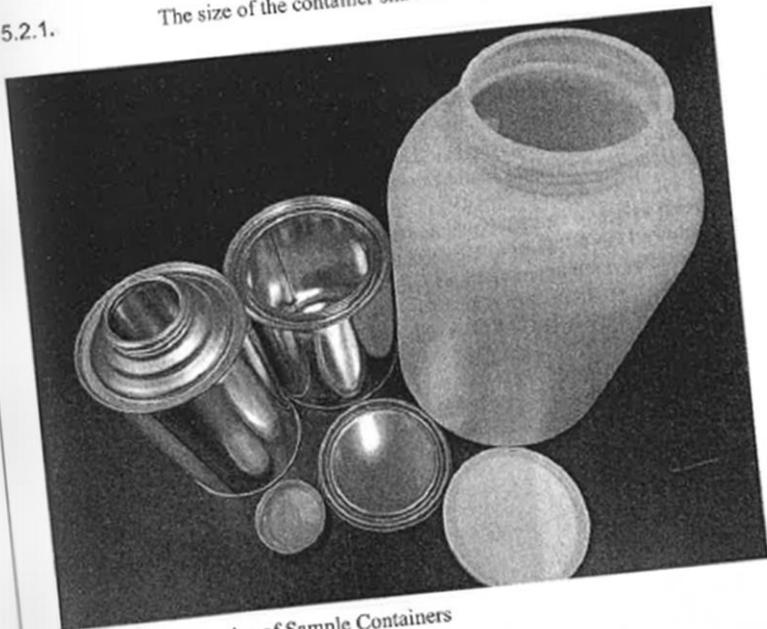


Figure 1—Examples of Sample Containers

6.

PROTECTION AND PRESERVATION OF SAMPLES

6.1.

Sample containers shall be new. The top and container shall fit together tightly.

6.2.

Take care to prevent the sample from becoming contaminated. Immediately after filling it, tightly seal the container.

6.3.

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 only a clean, dry cloth.

6.4.

Emulsified asphalt samples shall be protected from freezing.

Note 1—When sampling emulsified asphalt, do not sample material under pressure. Pressure may allow air entrapment which could result in erroneous test results. Bubbles in the material are one indication that air has been entrapped. In addition, the sampling container should be completely free of skin formation at the air-emulsion interface.



Note 2—An alternate to completely filling a container with emulsified asphalt is to fill the container until a small amount of space remains. Squeeze the container to cause the contents to fill to the top. Place the cap and securely tighten it. The space remaining will aid in mixing the sample prior to testing.

- 6.5. Transferring samples from one container to another shall be avoided if possible.
- 6.6. Immediately after filling, sealing, and cleaning, properly identify the sample containers with a suitable marker. Write on the container itself, not on the lid. Labels or tags also may be used for identification if they can be securely fastened to the container in such a manner as to ensure that they will not be lost in transit. Labels or tags shall not be attached to containers by using the lids to secure them. All identification materials shall maintain their integrity at temperatures up to 200°C (392°F).
- 6.6.1. Label information shall include at a minimum: material type, source and sample date.

7. **SAMPLING AT PLACE OF MANUFACTURE**

Buckets?



QUESTIONS?

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