ATT-15/95, MOISTURE CONTENT, Oven Method
Part II, Emulsified Asphalt Mixes

1.0 SCOPE

This method describes the procedure for determining the moisture content of emulsified asphalt mixes using a field laboratory oven.

2.0 EQUIPMENT

oven and oven thermometer  large mixing pan
metal pail  flat bottom scoop
drying pan  teri-cord gloves
plastic bags with twist ties
electronic balance - capable of reading to 0.1 g and with a 0.1 g accuracy The balance must be operated and calibrated as per manufacturer's recommendations.

Data Sheet: Moisture Content, MAT 6-24.

3.0 PROCEDURE

Generally oven drying for 2 hours at 130°C will be sufficient, but this time may vary depending on the moisture content and grading of the sample. Determine the moisture content of an emulsified asphalt mix sample as follows:

1. Label and tare a drying pan. Record the tare number and weight in line "C" of the data sheet as shown in Figure 1.
2. Obtain ¾ of a pail of representative emulsified mix as directed in ATT-37, SAMPLING MIXES.
3. Empty the contents of the pail into a mixing pan and blend it to ensure a non-segregated sample.
4. Take a mix sample of at least 1 000 g from the mixing pan and place it in the tared drying pan. Weigh and record as Wt. of Wet Sample + Tare (line "A").
5. Place the sample in the oven set at 130°C ± 5°C.
6. Dry the sample to a constant weight. To verify, place the sample back in the oven for 1 hour, then re-weigh. Repeat the drying and weighing at one hour intervals until two consecutive weights remain the same.
7. Weigh the oven dried sample and record as Wt. of Dry Sample + Tare (line "B").
8. Calculate the Weight of Water removed (line "D") as follows:

   \[ \text{Wt. of Water removed} = (\text{Wt. of Wet Sample} + \text{Tare}) - (\text{Wt. of Dry Sample} + \text{Tare}) \]
FIGURE 1

9. Determine the Weight of Dry Sample (line "E") as follows:
   \[ \text{Wt. of Dry Sample \% Tare} \times \text{Wt. of Tare} \]

10. Calculate the Moisture Content of the sample in percent (line "F") using the formula:
   \[ \text{Moisture Content (\%) = \left( \frac{\text{Wt. of Water}}{\text{Wt. of Dry Soil}} \right) \times 100} \]

4.0 HINTS AND PRECAUTIONS

1. Ensure that the oven temperature is maintained at 130EC ± 5EC. Do not allow the oven door to stay open for too long as it takes a while for the oven to regain the drying temperature.

2. Do not put moist samples in the oven on a shelf below dry samples. Place moist samples on the top shelf and partially dried samples on the lowest shelf.

3. Do not over-load the oven as samples will require a longer drying time.

4. Do not allow dried samples to pick up moisture after they are removed from the oven. Weigh them immediately after removing from the oven.

5. Keep the laboratory trailer benches clean so that spilled samples can be readily noticed and retrieved.

6. Use gloves when handling hot samples.

7. Use a separate mix sample (from the same pail of mix) for the extraction test as described in ATT-12, Part I or II. The sample must be at least 2 000 g and dried to a constant weight before extracting.