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New Issue

****THIS IS A NEW IM. – PLEASE READ CAREFULLY.****

DETERMINING THE MOISTURE CONTENT OF AGGREGATE AND RECYCLED MATERIALS FOR USE IN HMA

This test method is used to determine the percent of moisture in stockpiles being used in the production of HMA. The moisture contents determined are used to correct the weight of material to dry weight. Moisture correction is required for materials being fed into mixing plants that measure the weight prior to drying.

Apparatus:

Oven capable of maintaining a temperature of 275 ± 5 degrees F.
Balance capable of weighing a minimum of 1000g and accurate to 0.1g.
Sample pans
Spatula or spoon for stirring sample

Procedure for recycled materials containing asphalt:

Obtain a representative sample of the recycled material as per IM 301. Immediately reduce the sample to the test sample size, minimum of 500g, by splitting or quartering as per IM 336. Record the empty weight of the sample pan and the spatula or spoon. Tare the sample pan on the scale. Place the test sample in the pan and record the original weight of the sample to the nearest 0.1g. Place the sample in the oven maintained at 275 ± 5 degrees F. Stir the sample occasionally. Dry the sample to a constant weight defined as no change in weight exceeding 0.1% of the sample weight in 15 minutes of oven heating. Weigh the sample, pan and spatula or spoon together to avoid any loss of material.

> Note: Samples must be split and weighed as quickly as possible to avoid loss of moisture. If the splitting and test sample weight determination cannot be accomplished quickly, the sample should be sealed in a plastic bag until the test sample preparation can be done.

Once the sample has achieved a constant weight, cool the sample to room temperature. Weigh the sample, pan and spatula or spoon together to the nearest 0.1g. Subtract the weight of the pan and the spatula or spoon from the total weight to obtain the final dry weight of the sample. Calculate the percent moisture by determining the difference between the original weight of the test sample and the final dry weight of the sample and dividing the result by the final dry weight. Multiply the result by 100 to convert to a percentage. Report the moisture content to the nearest 0.1%.

Procedure for aggregates:

Apparatus: Hot Plate (Optional)

Obtain a representative sample of the aggregate as per IM 301. Immediately reduce the sample to the test sample size, minimum of 500g, by splitting or quartering as per IM 336. Record the empty weight of the sample pan. Tare the sample pan on the scale. Place the test sample in the pan and record the original weight of the sample to the nearest 0.1g. Place the sample in the oven maintained at 275 ± 5 degrees F or on a hot plate. Stir the sample occasionally. Dry the sample to a constant weight defined as no change in weight exceeding 0.1% of the sample weight in 15 minutes of heating.

> Note: Samples must be split and weighed as quickly as possible to avoid loss of moisture. If the splitting and test sample weight determination cannot be accomplished

quickly, the sample should be sealed in a plastic bag until the test sample preparation can be done.

Once the sample has achieved a constant weight, cool the sample to room temperature. Weigh the sample to the nearest 0.1g. Calculate the percent moisture by determining the difference between the original weight of the test sample and the final dry weight of the sample and dividing the result by the final dry weight. Multiply the result by 100 to convert to a percentage. Report the moisture content to the nearest 0.1%.

$$\text{Percent Moisture} = \frac{\text{Original Wet Weight} - \text{Final Dry Weight}}{\text{Final Dry Weight}} \times 100$$