ND T 255 – TOTAL EVAPORABLE MOISTURE CONTENT OF AGGREGATE BY DRYING

Conduct this procedure according to ND T 255.

Consult the current edition of AASHTO for procedure in its entirety and equipment specification details.

SCOPE

This test method covers the determination of the percentage of evaporable moisture in a sample of aggregate by drying both surface moisture and moisture in the pores.

REFERENCED DOCUMENTS

ND T 2 and AASHTO T 2, Sampling of Aggregates
AASHTO T 255, Total Evaporable Moisture Content of Aggregate by Drying

APPARATUS

Balance
Sample container
Spoon or spatula
Hot plate, stove, oven, or microwave (It is preferable the microwave oven has a vented chamber and a power rating of about 700 watts with variable power control.)

TEST SPECIMEN

Obtain sample according to ND T 2. Sample size may be determined by the following table:

Sample Size for Aggregate	
Nominal Max Size of Aggregate	Mass of Normal Weight Aggregate Sample
No.4 (4.75 mm)	1 lb (0.5 kg)
3/8" (9.5 mm)	3 lbs (1.5 kg)
1/2” (12.5 mm)	4 lbs (2 kg)
3/4" (19.0 mm)	7 lbs (3 kg)
1" (25.0 mm)	9 lbs (4 kg)
1½" (37.5 mm)	13 lbs (6 kg)
2" (50 mm)	18 lbs (8 kg)
2½" (63 mm)	22 lbs (10 kg)
3" (75 mm)	29 lbs (13 kg)

Sample should be representative of the moisture content of the supply being tested and should not have mass less than the amounts listed in the above table. Protect the sample from moisture loss until the initial weight is determined.

PROCEDURE

Dry the sample by means of a selected source of heat. An oven capable of maintaining a temperature of 230 ± 9°F (110 ± 5°C) may be used.

Unless an oven is used, stir during drying to accelerate the process and avoid localized overheating. If a microwave oven is used, stirring is optional.

When drying a sample on a hot plate or stovetop, great care must be taken to keep from burning the sample or losing material when the sample is stirred.

Dry the sample until constant weight is achieved.

CALCULATIONS

Calculate the percent moisture as follows:

$$A = [(B - C)/C] \times 100$$

A = Percent moisture
B = Mass of original sample
C = Mass of dry sample

Report percent moisture to the nearest 0.1%.

NOTE

Constant weight is defined as when further drying will cause less than 0.1% additional loss in mass.

CALIBRATION

A calibration check of the equipment should be performed annually as a minimum, or whenever damage or repair occurs.