

## **ND T 11 - MATERIALS FINER THAN NO. 200 (75 $\mu$ m) SIEVE IN MINERAL AGGREGATES BY WASHING**

Conduct this procedure according to ND T 11.

The AASHTO standard test procedure reports the percentage of material finer than the No. 200 sieve to the nearest 0.1%, except if the result is 10% or more, than it reports to the nearest whole number. The NDDOT modification reports the accuracy to the same significant digit as the specification for the class of aggregate.

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

### **SCOPE**

This test method determines the amount of material finer than the No. 200 sieve in aggregate by washing. Procedure A shall be used unless otherwise specified.

When accurate determinations of material finer than the No. 200 in fine or coarse aggregate are desired, this test method is used on the aggregate sample prior to dry sieving according to ND T 27. The results of this procedure are included in the calculations for ND T 27.

### **REFERENCED DOCUMENTS**

ND T 2 and AASHTO T 2, Sampling Aggregates  
AASHTO T 11, Materials Finer than No. 200 Sieve by Washing  
ND T 27 and AASHTO T 27, Sieve Analysis of Fine and Coarse Aggregate  
ND T 248 and AASHTO T 248, Reducing Samples of Aggregate to Testing Size  
ND T 255 and AASHTO T 255, Total Evaporable Moisture Content of Aggregate by Drying

### **APPARATUS**

Balance  
Sieves: No. 16 and No. 200  
Sample splitter  
Oven  
Washing container  
Spoon

## TEST SPECIMEN

Obtain sample according to ND T 2. Thoroughly mix and reduce according to ND T 248.

Test specimen shall be a representative sample based on the following table.

Nominal Maximum Size	Minimum Mass
No. 4 (4.75 mm) or smaller	300 g
3/8" (9.5 mm)	1000 g
3/4" (19.0 mm)	2500 g
1½" (37.5 mm)	5000 g

The sample size required for this test is a minimum after drying.

## PROCEDURE

Record all information on SFN 9987 or SFN 2455. Weights are recorded to the nearest 0.1 g.

Oven dry the sample according to ND T 255 at a temperature of  $230 \pm 9^{\circ}\text{F}$  ( $110 \pm 5^{\circ}\text{C}$ ). Weigh and record as original weight of sample.

Place the sample into the washing container and add sufficient water to cover. Stir and agitate the sample with the spoon until all fines are in suspension.

Slowly decant the water into the stacked No. 16 and No. 200 sieves being careful not to lose the coarser material of the sample.

Add a second charge of water to the sample in the washing container and stir, agitate, and decant. Repeat this process until the wash water is clear.

Wash any remaining material on the sieve back into the sample. Do not decant any water from the container except through a No. 200 sieve to avoid loss of material. Any remaining water should be evaporated by the drying procedure.

Oven dry the sample according to ND T 255 at a temperature of  $230 \pm 9^{\circ}\text{F}$  ( $110 \pm 5^{\circ}\text{C}$ ). Weigh and record as weight after wash.

## CALCULATIONS

If this test has been ran for the purpose of accurate determination of material finer than the No. 200 in fine or coarse aggregate, the results of this procedure are determined by the calculations for ND T 27 on SFN 9987.

To calculate material passing the No. 200 sieve as percent of the total sample for coarse aggregate for concrete, subtract dry weight after washing from weight of total sample and divide result by weight of total sample. Multiply this result by 100 and record as material passing No. 200 sieve as percent of total sample.

The equation is as follows:

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

*A = percent of material finer than No. 200 sieve by washing*

*B = weight of total sample before washing*

*C = weight of dry sample after washing*

## REPORT

Report the percent of material finer than the No. 200 sieve to the same significant digit as the specification for the class of aggregate.

## NOTES

A piece of rubber tubing may be attached to a water faucet and be used to rinse material from the sieves. The velocity of the water, which may be increased by pinching the tubing, should not be sufficient to cause splashing of the sample over the sides of the sieve.

## CALIBRATION

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