

AGRICULTURAL LIMESTONE

1. SCOPE: This method outlines the procedure for testing either agricultural limestone, or limestone ground to pass a No. 100 sieve.
2. APPARATUS – MATERIALS:
 - 2.1. No. 10, No. 50 Sieves.
 - 2.2. Hydrochloric Acid.
 - 2.3. Sodium Hydroxide.
 - 2.4. Phenolphthalein.
3. PROCEDURE:
 - 3.1. Sample Preparation: The sample is usually received in a quart can, or in a bag. If the sample is not dry, it must be dried before any tests are performed. This may be done by splitting the sample and drying in an oven at 110 °C for 1 - 1½ hours. When the sample is dry, let it cool to room temperature.
 - 3.2. Sieve Analysis: Perform sieve analysis in accordance with AASHTO T27 Sieve Analysis of Fine and Coarse Aggregates.
 - 3.3. Calcium Carbonate Equivalent: Grind sample to pass No. 50 sieve, and mix thoroughly. Place 1 gram ground sample in 250 ml Erlenmeyer flask. Add 50 ml of 0.5 N HCl (standard solution), and boil gently for 5 minutes. Cool, and titrate excess acid with 0.25 N NaOH (standard solution) using phenolphthalein.
4. CALCULATIONS:
$$\frac{5(V_1N_1 - V_2N_2)}{W_1} = \% \text{ CaCO}_3 \text{ Equivalent}$$

V_1 = Volume of HCl

V_2 = Volume of NaOH

N_1 = Normality of HCl

N_2 = Normality of NaOH

W_1 = Sample weight

5. REPORT:

5.1. % Passing 2000 μm (No. 10) Sieve, to the Whole Number [100 mesh only]

5.2. % Passing 300 μm (No. 50) Sieve, to the Whole Number [100 mesh only]

5.3. CaCO_3 Equivalent

APPROVED

DIRECTOR
DIVISION OF MATERIALS

DATE

05/09/08

Kentucky Method 64-221-08

Revised 05/09/08

Supersedes 64-221-03

Dated 01/16/03

Km22108.doc