

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS AND TESTING DIVISION

MATERIALS PROCEDURE

CHEMICAL ANALYSIS OF SOIL

1.0 PURPOSE

1.1 To set forth methods for the chemical analysis of soil.

2.0 SCOPE

2.1 These procedures shall be used to determine the pH and organic content of soil. Other chemical components shall be tested as described in Standard Methods of Chemical Analysis, F. J. Welcher, Editor, Sixth Edition, pages 2310 - 2337.

3.0 APPLICABLE DOCUMENT

3.1 American Association of State Highway and Transportation Officials (AASHTO) T-267.

4.0 pH

4.1 Test Method: 1:1 soil-water ratio, page 2329 of previously stated reference.

4.2 Reagents

4.2.1 Distilled water, freshly boiled

4.3 Apparatus

4.3.1 pH meter capable of measuring to the nearest 0.1 pH unit

4.3.2 Buffer solutions of pH 4.0, 7.0, and 10.0

4.4 Procedure

4.4.1 Dry the finely ground soil overnight at $105 \pm 4^\circ \text{C}$. Place 20 grams of the soil in a 50 milliliter beaker. Add 20 milliliters of distilled water to the soil and stir at regular intervals for 1 hour. Measure the pH of the mixture, stirring well just before placing the electrodes deep in the mixture.

4.4.2 The pH meter must be standardized prior to measuring the pH of the soil.

4.5 Calculation

4.5.1 The pH obtained on the soil-water mixture is the pH of the soil.

5.0 ORGANIC CONTENT

5.1 Test Method: AASHTO T-267


Gary L. Robson, Director
Materials Control, Soils
and Testing Division

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