

STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION  
MATERIALS DIVISION

METHOD FOR THE DETERMINATION OF  
pH OF SOIL

**SCOPE:**

THIS METHOD COVERS THE PROCEDURE FOR DETERMINING THE HYDROGEN-ION CONCENTRATION (pH) OF SOIL SAMPLES.

**APPARATUS:**

1. A #4 SIEVE (4.75mm)
2. ONE LITER BOTTLE
3. A 100 ml GLASS BEAKER
4. WASH BOTTLE CONTAINING DISTILLED WATER
5. A pH METER OR SOLUTION ANALYZER W/DIP CELL FOR RANGE TO BE TESTED
6. A STANDARD SOLUTION OF pH7 FOR CALIBRATING DIP CELL
7. A STANDARD SOLUTION OF pH10 FOR CALIBRATING DIP CELL

**SAMPLE PREPARATION:**

PERFORM THE FOLLOWING ON MATERIAL THAT HAS BEEN OBTAINED IN ACCORDANCE WITH NEV. T203:

AFTER THOROUGH MIXING OF SAMPLE, SCREEN IT THROUGH A #4 (4.75mm) SIEVE. IF THE SAMPLE IS TOO MOIST TO BE SIEVED, IT MAY BE AIR-DRIED (OR DRIED AT 140 DEGREES MAX.) ONLY THE MATERIAL THAT PASSES THE #4 (4.75mm) SIEVE IS TO BE USED FOR THE TEST.

1. PLACE 100 G OF -#4 (4.75mm) MATERIAL IN THE ONE LITER BOTTLE.
2. ADD 200 ml OF DISTILLED WATER TO THE SAMPLE IN THE BOTTLE AND AGITATE UNTIL THE SAMPLE IS IN COMPLETE SUSPENSION.
3. ALLOW THE SLURRY SOLUTION TO SETTLE FOR A MINIMUM OF 4 HOURS.
4. DECANT OFF 60 TO 80 mls OF THE WATER FROM THE SLURRY SOLUTION INTO THE 100 ml GLASS BEAKER AND PERFORM pH TEST ON THIS SOLUTION

**PROCEDURE:**

1. FOLLOW THE MANUFACTURERS INSTRUCTIONS PROVIDED WITH THE pH METER OR SOLUTION ANALYZER TO DETERMINE THE pH OF THE DECANTED FLUID.

**PRECAUTIONS:**

CAREFULLY FOLLOW THE ABOVE PROCEDURE AND THE MANUFACTURER'S INSTRUCTIONS. BE SURE TO WASH THE GLASS

BEAKER THOROUGHLY AFTER EACH SAMPLE HAS BEEN TESTED.

IF THE READING IS UNSTABLE WHEN THE ELECTRODE IS  
IMMERSED IN THE DECANTED WATER, LEAVE THE ELECTRODE IMMERSERD  
UNTIL THE READING HAS STABILIZED.

**REPORT:**

REPORT THE pH TO THE NEAREST (0.1) TENTH.

**REFEREE METHOD:**

IN CASE OF CONFLICTING TEST RESULTS BETWEEN CERTIFIED  
TESTING LABS, THE AASHTO T289 TEST METHOD WILL BE PERFORMED  
TO OBTAIN pH RESULTS.