

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION

METHOD FOR THE DETERMINATION OF
MINIMUM RESISTIVITY OF SOIL

SCOPE:

THIS METHOD COVERS THE PROCEDURE FOR DETERMINING THE
MINIMUM RESISTIVITY 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 THAT HAS A
RESISTIVITY GREATER THAN 20,000 (ohm) X (cm)
5. A CONDUCTIVITY METER W/DIP CELL FOR RANGE TO BE
TESTED
6. A STANDARD SOLUTION 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 THAT HAS A RESISTIVITY
GREATER THAN 20,000 (ohm)X(cm) 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
24 HOURS.
4. DECANT OFF 60 TO 80 mls OF THE WATER FROM THE SLURRY
SOLUTION INTO THE 100 ml GLASS BEAKER AND PERFORM
CONDUCTIVITY TEST ON THIS SOLUTION

PROCEDURE:

1. FOLLOW THE MANUFACTURERS INSTRUCTIONS PROVIDED WITH
THE CONDUCTIVITY METER TO DETERMINE THE CONDUCTIVITY
OF THE DECANTED FLUID.
2. PERFORM CALCULATION TO CONVERT CONDUCTIVITY RESULT
TO A RESISTIVITY RESULT.

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 IMMERSSED IN THE DECANTED WATER, LEAVE THE ELECTRODE IMMERSSED UNTIL THE READING HAS STABILIZED.

REPORT:

REPORT THE EVALUATED RESISTIVITY TO THE NEAREST WHOLE NUMBER.

REFEREE METHOD:

IN CASE OF CONFLICTING TEST RESULTS BETWEEN CERTIFIED TESTING LABS, THE AASHTO T288 TEST METHOD WILL BE PERFORMED TO OBTAIN RESISTIVITY RESULTS.