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Remarks and Instructions

The complete manual, revision packages, and individual chapters can be accessed at www.wsdot.wa.gov/publications/manuals/m46-01.htm.

Please contact Linda Hughes at 360-709-5412 or hughel@wsdot.wa.gov with comments, questions, or suggestions for improvement to the manual.

For updating printed manuals, page numbers indicating portions of the manual that are to be removed and replaced are shown below.

Chapter	Remove Pages	Insert Pages
Title Page	i–ii	i–ii
T 606 Method of Test for Compaction Control of Granular Materials	5–6	5–6

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Engineering and Regional Operations
Materials Laboratory

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9.1.9 Determine the mass of the specimen in the mold to the nearest 0.01 lb (5g). Record this as:

Mass of Mold + Sample

9.1.10 Remove the specimen from the mold and determine the moisture content in accordance with WSDOT FOP for AASHTO T 255.

9.1.11 Vertically slice through the center of the specimen, take a representative specimen (at least 1.1 lbs (500 g)) of the materials from one of the cut faces (using the entire specimen is acceptable), weigh immediately, and dry in accordance with AASHTO T 255 to determine the moisture content, and record the results.

9.1.12 Calculate and record the dry density of fine fraction.

9.2 Test No. 2 – Compaction Test of the Coarse Fraction

9.2.1 Procedure 1 – Minus ¾ in (19 mm) Aggregates

9.2.1.1 Determine the mass of the coarse aggregate to the nearest 0.01 lb (5g).

9.2.1.2 Add 2.5 percent moisture to the sample, mix thoroughly.

9.2.1.3 Place in 0.1 ft^3 (0.0028 m^3) mold in approximately three equal lifts. Compact each lift with 25 blows of the tamping rod (omit rodding). Avoid the loss of any material during placement.

9.2.1.4 Follow steps 9.1.4 through 9.1.6.

9.2.1.5 Calculate and record the dry density of coarse fraction.

9.2.2 Procedure 2 – Plus ¾ in (19 mm) Aggregates

9.2.2.1 Determine the mass of the coarse aggregate to the nearest 0.01 lb (5g) or better.

9.2.2.2 Divide the sample into five representative, approximately equal portions.

9.2.2.3 Place one of the portions into the ½ ft^3 (0.014 m^3) mold and level the surface.

9.2.2.4 Position the piston on the material, mount the mold in the compactor, and compact as described in steps 9.1.4 through 9.1.6.

Note: Spacers may be needed between the load spring and piston to adjust the elevation of the mold to the height of the lift being compacted.

9.2.2.5 Repeat 9.2.2.3 and 9.2.2.3 for the remaining for portions of material.

9.2.2.6 After the final portion is compacted, determine the height of the compacted sample.

9.2.2.7 Calculate and record the dry density of coarse fraction (see Calculations section).

9.3 Test No. 3 – Specific Gravity Determination for Maximum Density Test

9.3.1 Material

9.3.1.1 Fine fraction U.S. No. 4 (4.75 mm) minus 1.1 lbs (500 g) minimum.

9.3.1.2 Coarse fraction U.S. No. 4 (4.75 mm) plus 2.2 lbs (1,000 g) minimum.

9.3.2 Procedure

9.3.2.1 Place dry materials, either fine or coarse fraction, in pycnometer, add water.

9.3.2.2 Put pycnometer jar top in place and connect to vacuum apparatus.

9.3.2.3 Apply vacuum for at a minimum of 20 minutes until air is removed from sample. Slight agitation of the jar every 2 to 5 minutes will aid the de-airing process. If the material boils too vigorously, reduce the vacuum.

9.3.2.4 Remove vacuum apparatus, fill pycnometer with water, dry outside of jar carefully and weigh.

9.3.2.5 Water temperature during test should be maintained as close to 68° ± 1°F (20° ± 0.5°C) as possible.

Calculations

10. Determine the dry density of each of the fine aggregate points as follows

10.1 Calculate Specific Gravity as follows:

$$\text{Sp. Gr.} = \frac{a}{(a+b-c)}$$

Where:

a = Weight of dry material, grams
b = Weight of pycnometer + water, grams
c = Weight of pycnometer + material + water, grams

10.2 Calculate the wet sample weight:

$$e = c - d$$

Where:

e = Wet sample weight, g
c = mold and sample weight
d = Tare of mold assembly