
ATTI - PERFORMANCE CHECKLIST

AASHTO T 89-22 – Determining the Liquid Limit of Soils

Sect. **Sample Preparation**

- 11.1 1. The sample was taken from minus #40 material prepared in accordance with
4.1 AASHTO R58 and weighs (about 50 grams for *Method B*)(*about 100grams Method A*).
- 5.2 2. Check the height of drop of the cup prior to each day's testing.
- 5.2 3. Demonstrate where to place tape on bottom of cup, start machine and tell if
the sound is correct at the point of contact.

Test Procedure

- Sect. 4. The soil sample is placed into the mixing dish and thoroughly mixed with (8 to
12.1 10 ml. Method B)(15 to 20 ml Method A) of distilled or demineralized water.
- 6.1 5. Mixing is performed by alternately and repeatedly stirring, kneading and
6.1 chopping with a spatula.
- 6.1 6. Additional water is added in increments of 1 to 3 ml.
- 6.1 7. Each increment of water thoroughly mixed before more is added.
- 6.1 8. Once testing has begun, no additional dry soil may be added to the sample. If
6.1 too much moisture was added, sample is discarded or mixed and kneaded.
- 6.1 9. Once sample has attained a uniform mass of consistency, place an adequate
amount into the recess of the cup (above the spot where the cup rests on the
base and shall be squeezed and spread with the spatula so its level to a depth
of 10mm at maximum thickness. Use a few strokes as possible to avoid
entrapment of air bubbles.
- 6.1 10. Return any excess material to cup and cover to avoid loss of moisture.
- 6.1 11. Divide the soil in the cup, by a firm stroke with the grooving tool through the
6.1 center. To avoid tearing of the groove or slipping in the cup, up to six strokes
from back to front or from front to back counting as one stroke, shall be
permitted. The depth of the groove should be increased with each stroke and
only the last stroke should scrape the bottom of the cup.

- 6.3 12. Drop cup until the two edges of the sample come in contact at the bottom of the groove for a distance of about 0.5" (13mm) and record the number of drops of the cup. (2 taps per sec.)

Sect. **Method B**

- 12.2 13. Groove closure shall be restricted to between 22 to 28 blows. After obtaining closure in the acceptable range, immediately return the soil to the mixing dish and, without adding any additional water, repeat. If the second closure occurs in the acceptable range and is within two blows of the first closure, secure a water content specimen.

- 6.4 14. A slice of soil, approximately the width of the spatula, extending from edge of sample to edge of sample, at a right angle to the groove and including the groove, at the point where the sample flowed together is placed in a suitable container.

Sect. **Method A**

- 6.6 15. The foregoing operations shall be repeated for at least two additional portions of the sample to which sufficient water has been added to bring the soil to a more fluid condition.

- 6.6 16. At least one determination made in each of the following ranges of shocks with the following ranges *in this order*: 25-35, 20-30, 15-25, so that the range in the three determinations is at least 10 shocks.