

ATT-30/95, TEMPERATURES

1.0 SCOPE

This method describes the procedures for obtaining the temperature of asphalt and asphalt mixes for the purpose of quality control.

2.0 EQUIPMENT

40 mm dial face by 200 mm stem thermometer (oven), or
23 mm dial face by 125 mm stem thermometer (pocket)
plant and road log books

Data Sheets: Drum Plant Inspection form (MAT 6-42 or MAT 6-66), or
Weekly Cutback or Emulsified Mix Report (MAT 6-59)

3.0 PROCEDURE

Temperature control at the plant ensures the mix discharge at the plant is at the correct asphalt application compaction viscosity temperature. Temperature control on the road aids in the ease of workability and compaction.

3.1 Temperatures at the Asphalt Plant

Obtain temperature of asphalt and plant mix during mix production as follows:

1. Occasionally obtain the temperature of the asphalt being delivered to the plant from the thermometer built into the truck tank.
2. Record the date, truck no., batch no., bill of lading no., and the Asphalt Delivery Temperature in the plant log book.
3. Obtain the temperature of the asphalt in storage directly from the thermometer at the storage tank.
4. Record the date, unit (ASBC) or test number (ACP, RACP), time and the Asphalt Storage Temperature in the plant log book.
5. Obtain the temperature of the mix as soon as possible after it is discharged into the hauling trucks by inserting the thermometer into the mix in the truck box or into the mix sample in the pail.
6. Allow time for the temperature to stabilize, then take the reading. Record in the plant log book the date, test number, time and Temperature of Mix at discharge.
7. At the end of each day, summarize all plant temperatures as follows:
 - a) If drum mixing ACP, enter on the Drum Plant Inspection form the asphalt storage and mix discharge temperatures.

- b) If mixing ASBC (cold mix), report the discharge temperature on the Weekly Cutback and Emulsified Mix Report form and the asphalt storage temperature on the Drum Plant Inspection Report form.

3.2 Temperatures on the Road

The following temperatures should be taken at the same station and location.

1. As soon as the paver places the mix on the road, insert the stem of the 23 mm dial thermometer fully into the mix,
2. Allow approximately one minute for the temperature to stabilize, then take the reading.
3. Record in the road log book the date, test number, station, lane, mat, lift, and Placing Temperature.
4. As soon as the breakdown roller has completed one pass over the freshly laid mix, insert the stem of the thermometer fully into the mix.

NOTE: One pass is completed when the full width of the mat has been rolled once by a roller.

5. After approximately one minute, take the reading.
6. Record the breakdown pass temperature in the road log book.
7. As soon as the final roller completes the final pass, take the temperature of the mix as follows:
 - a) Insert stem of thermometer horizontally into the edge of the mat.
 - b) Allow approximately one minute for the temperature to stabilize, then take the reading.
8. Record the final temperature in the road log book.
9. Obtain air temperature per test or unit number and record it in log book.

4.0 HINTS AND PRECAUTIONS

1. Wear gloves when taking the temperature of hot asphalt concrete mix and exercise extreme care to avoid unnecessary burns.
2. Calibrate the thermometers as directed by the equipment manufacturer.
3. While taking temperatures, visually inspect the mix or the finished mat. Record any pertinent information in the log book and later transfer it to the corresponding report form.
4. Take extreme care when obtaining mix temperatures from hauling trucks and always use the sampling stands.