VERIFICATION OF WATER-MEASUREMENT DEVICES FOR CONCRETE DELIVERY VEHICLES

1. Scope
   1.1. This procedure outlines the requirements necessary to verify the calibration of truck mounted water meters, and truck-mounted sight gauges used in all Alabama Department of Transportation, herein referred to as ALDOT or as the Department, projects.
   1.2. This procedure also establishes the verification frequency for truck mounted water meters and truck mounted sight gauges.

2. Required Equipment
   2.1. The concrete producer shall provide the following equipment:
       2.1.1. Digital scale with a capacity of at least 50 lbs {23 kg} and a scale surface area of at least 144 in² {930 cm²}, calibrated within the last 6 months.
       2.1.2. Standard test weights to verify scale accuracy.
       2.1.3. A water-proof container capable of holding at least 5 gallons of water.

3. Verification Procedure
   3.1. The concrete producer’s Concrete Technician, certified by the Department, shall perform the verification in the presence of an ALDOT Area Materials representative.
   3.2. Verify that the calibration of the scale does not exceed six months.
   3.3. Water Meters
       3.3.1. Place the empty water-proof container on the scale, and record the weight [1]*.
       3.3.2. Deposit a volume of water specified by the ALDOT inspector in the container. Record the number of gallons indicated on the water meter [5].
       3.3.3. Record the weight of the container and the water [2].
       3.3.4. Subtract the weight of the empty container to determine the weight of water [3].
       3.3.5. Divide the weight of the water by 8.34 pounds/gallon to determine the actual number of gallons provided [4].
       3.3.6. Determine the allowable tolerances of the water meter as follows:
   3.4. Truck-mounted Sight Gauge
       3.4.1. Place the empty water-proof container on the scale, and record the weight [1].
       3.4.2. Deposit a volume of water specified by the ALDOT inspector in the container. Record the number of gallons indicated on the sight gauge [5].
       3.4.3. Record the weight of the container and the water [2].

*=The numbers in brackets correspond to the numbered fields of the BMT-172.
3.4.4. Subtract the weight of the empty container to determine the weight of water [3].

3.4.5. Divide the weight of the water by 8.34 pounds/gallon to determine the actual number of gallons provided [4].

3.4.6. Subtract 1 gal from [4] to determine the negative tolerance [6]. Add 1 gal to [4] to determine the positive tolerance [7].

4. Verification Frequency & Documentation

4.1. Verification shall be performed every six months.

4.2. Any time the Engineer suspects inaccuracy in the equipment, he/she may request an on-site verification. Whenever this occurs, the verification shall be performed by the producer’s Concrete Technician, certified by the Department, and witnessed by an ALDOT project inspector possessing a valid ALDOT Concrete Technician certification.

4.2.1. When field verification is ordered, it is imperative that the verification of sight gauges take place on flat, level terrain.

4.3. A record of the verification will be maintained by the Department on BMT-172, “Record of Verification of Truck Mounted Water Measuring Devices”.