

**HOT MIX ASPHALT (HMA) IN-HOUSE CALIBRATION PROCEDURE # 7  
FLOW METERS: ABSON-RECOVERY**

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**1. SCOPE**

- 1.1 Use this procedure to verify the Abson-Recovery flow meters. [TxDOT test procedure](#), Tex-211-F, requires a verified flow meter
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**2. APPARATUS**

- 2.1 Fisher Scientific calibrated digital flow meter, Model Number 650.
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**3. PROCEDURE**

- 3.1 Place the digital flow meter on level surface.
- 3.2 Through the lower gas inlet tube, fill the liquid chamber with the flow meter solution to a level just below the inner glass tubing.
- 3.3 Connect the flexible tubing to the gas source.
- 3.4 Use the lower inlet to check pressure flows and the upper inlet to check vacuum flows.
- 3.5 Start the airflow you wish to measure. In general, for faster flow rates (500 ml/min or greater) slide the glass bubble meter to its lower position on the stand.
- 3.6 At very low flow rates (less than 10 ml/min), the instrument may turn itself off before the bubble has a chance to reach the lower sensor unless the ON/RESET button is momentarily pressed just after the bubble is formed to establish a new "INSTRUMENT TIME ON" cycle.
- 3.7 Press the ON/RESET button momentarily to turn on the instrument. When a "0" is displayed, the instrument will be ready to measure a volumetric flow (ml/min).
- 3.8 At low flow rates, while the bubbles are being timed through the sensor block, the latex bulb SHOULD NOT BE TOUCHED or erroneous flow rates may result.
- 3.9 At high flow rates above 2 l/min, place the enclosed rubber bulb clamp on the rubber bulb with the "U" open and parallel with rubber bulb.

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- 3.10 With gas flowing, lightly tighten the clamp until the bubbles begin to form. Adjust the clamp until the bubbles are going through the glass tube one at the time.
- 3.11 When the bubble passes the lower sensor in the sensor block, the unit should go on. It should remain on only as long as there are bubbles between the lower and upper sensors.
- 3.12 If it remains on after all bubbles have left the sensor block area, or if a bubble pops while between the sensors, press RESET momentarily.
- 3.13 After the bubble passes the upper sensor in the sensor block, the display will read out the gas flow rate. This reading will be held until the next bubble comes along or the unit is turned off.

**Note 1**—The instrument is calibrated to and should be operated with a completely wet bubble meter.