

July 12, 2016

Caterpillar Surveillance Panel
COAT Task Force

Options for Micromotion Temperature Compensation and Density Calibration

- 1) Calibrate the RTD temperature reading in the Micromotion
 - a) Done by Emerson
 - b) Done by the test labs
 - c) Set the RTD reading to 90C permanently

- 2) Calibrate each sensor density reading up to 90C
 - a) Done by Emerson
 - b) Done by test labs

- 3) Calibrate the sensor with fluids of known densities that bracket the typical density of HD oils
 - a) Such fluids would need to have high boiling point, low vapor pressure, and a lower density than water – such as octane (SG of 0.69 g/ccm), decane (SG of 0.73 g/ccm), and phenol (SG of 0.96 g/ccm)

- 4) Use the density reading measured by the Micromotion at the beginning of the test procedure to calculate aeration results.

NOTE: All of the options above may require an industry correction factor.

It is SwRI's opinion that calibrating the density of the sensor to 90C will bring readings at all the laboratories closer.

SwRI is exploring the option of obtaining a density calibration apparatus.