

ABSTRACT

Based on results of an evaluation performed during the winter of 1985-86, six Troxler 3241-B Asphalt Content Gauges were purchased for District use in monitoring project asphalt contents. Use of these gauges will help reduce the need for chemical based extractions. Effective use of the gauges depends on the accurate preparation and transfer of project mix calibrations from the Central Lab to the Districts.

The objective of this project was to evaluate the precision and accuracy of a gauge in determining asphalt contents and to develop a mix calibration transfer procedure for implementation during the 1987 construction. The first part of the study was accomplished by preparing mix calibrations in the Central Lab gauge and taking multiple measurements of a sample with known asphalt content. The second part was accomplished by preparing transfer pans, obtaining count data on the pans using each gauge, and transferring calibrations from one gauge to another through the use of calibration transfer equations. The transferred calibrations were tested by measuring samples with a known asphalt content.

The study established that the Troxler 3241-B Asphalt Content Gauge yields results of acceptable accuracy and precision as evidenced by a standard deviation of 0.04% asphalt content on multiple measurements of the same sample. The calibration transfer procedure proved feasible and resulted in the calibration transfer portion of Materials I.M. 335 - Method of Test For Determining the Asphalt Content of Bituminous Mixtures by the Nuclear Method.