Texas Department of Transportation

CENTER FOR TRANSPORTATION RESEARCH

PROJECT SUMMARY REPORT

0-7168-01: Support XRF Determination of Tire Rubber Content in Asphalt Binders

Background

This project is a field support extension of Project 0-7168, "Use of X-Ray Fluorescence (XRF) to Determine Tire Rubber Content in Asphalt Binders." That project showed that XRF can determine tire rubber content accurately.

This project was to provide field support to districts to conduct XRF for tire rubber content in the field and a project site, investigate analysis of asphalt-rubber (AR) binder, and conduct a round-robin testing program of unknown samples to investigate accuracy and repeatability.

What the Researchers Did

Work performed on this project included:

- Visited each of the Brownwood, Lufkin, and Odessa districts during their seal coat projects to provide training refresher and support field project testing on site using the XRF.
- Investigated the use of portable XRF to determine tire rubber content in Asphalt Rubber Binders.
- Conducted a round robin on blind samples to evaluate the accuracy and repeatability of the test results.

What They Found

A portable XRF instrument can be used on the project site, on the roadside, to determine tire rubber content in tire rubber-modified binders and AR binders. This is contingent on developed calibration standards for that specific combination of material.

What This Means

A District that has a portable XRF instrument can evaluate tire rubber-modified binder and AR binder at the district level, even on the project roadside, to determine the tire rubber content in a timely manner.

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Project Completed:
08-31-2024

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