

PROJECT SUMMARY REPORT

0-7073: Improving Testing Requirements in Item 300 of TxDOT Standard Specifications

Background

The goal of this project was to identify and update the tests and specifications in Item 300 as needed to ensure that the test methods and specifications are relevant, not redundant, and up-to-date. A review of most materials in Item 300 was in the scope of this project; however, crack sealers, asphalt-rubber binders, and recycling agents were not included.

What the Researchers Did

In order to achieve this goal, each test in the Item 300 specifications was reviewed for relevance, applicability (i.e., whether the test was intended to assess safety, performance, or constructability), accuracy (i.e., ability to predict intended parameters), and practicality (i.e., cost of capital equipment; time taken for sample preparation and other activities before, during, and after the test; and environmental considerations such as use of solvents).

Recommended changes along with an adoption level of 1-3 was developed, where:

- Level 1: Proposed changes that have adequate evidence for immediate adoption.
- Level 2: Proposed changes that have substantial evidence based but require revised parameters or specification limits.
- Level 3: Proposed changes that require additional data/evidence for adoption.

New test procedures were developed, as identified, to address needed changes.

Data for new proposed test procedures was generated and analyzed to develop suggested specification limits. This data explored the agreement between laboratories, developed test conditions, and round-robin experiments.

A new long-term aging test was developed for PG binders.

What They Found

The researchers found existing tests that needed deletion, replacement, modification, or addition. They found areas where new tests needed development and newer, more performance-based tests could replace old tests. Based on what they did, researchers recommended tests and specification limits for materials described in Item 300, "Asphalts, Oils, and Emulsions." A summary of the reviewed test procedures, including proposed new tests procedures, are shown in Figure 1.

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Item 300 – Changes

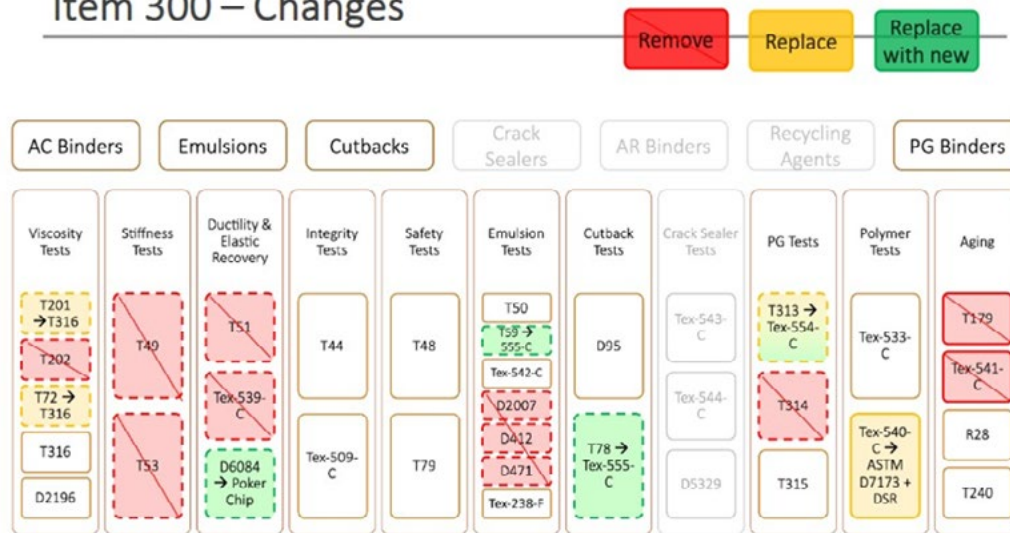


Figure 1. Asphalt Test and Characteristics Summary.

What This Means

The results of this research provides TxDOT an opportunity to update Item 300 to be more descriptive of materials and include and measure characteristics that are more performance-based than exist currently.

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