VERMONT
AGENCY OF TRANSPORTATION

FACT SHEET

Evaluation of Stripping Potential Tests for Bituminous Concrete

PROJECT TITLE

Evaluation of Stripping Potential Tests for Bituminous Concrete

STUDY TIMELINE

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Stripping, ASTM D3625, Boiling Water test, Moisture susceptibility, moisture damage, Anti-stripping Agent.

More information about the VTrans Research Program, including additional Fact Sheets, can be found at: http://vtrans.vermont.gov/planning/research

Introduction

The objective of this project is to evaluate the reliability of ASTM D3625 (boiling water test) as a quick and inexpensive test method for determining the stripping potential of bituminous concretes. The research work also aims at exploring approaches that can lead to a quantifiable test methods.

Methodology or Action Taken

The research methodology consists of laboratory testing of plant and laboratory produced asphalt mixtures containing various combinations of asphalt type, binder, and Anti-Stripping Agent (ASA) (a chemical additive that reduces the moisture susceptibility of the bituminous concrete) using ASTM D3625 along with other conventional quantitative methods such as Modified Lottman Test and Hamburg Wheel Tracking test.

Conclusions

ASTM D3625 is efficiently capable of distinguishing the prone to stripping and none-prone aggregates, however, quantifying the magnitude of the stripping calls for specifically produced stripping indicator tools (e.g., StripScan, Colorimeter, ACT). Boiling test can clearly show the presence of ASA in the mixture, however, determining the quantity of ASA calls for application of stripping indicator devices.

Potential Impacts and VTrans Benefits

The results of this research project will provide the VTrans with guidelines for evaluating the stripping potential of the HMA mixtures produced by VTrans' contractors, effectiveness of the ASA being used in the mixture, and weather or not the mixture contains ASA.