

Stone Matrix Asphalt

PROJECT TITLE

Stone Matrix Asphalt

STUDY TIMELINE

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VTRANS CONTACTS

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

Introduction or Problem Statement

Pavement distresses, rutting/cracking/raveling are an ever-present problem, caused by increase traffic loading, construction issues, and material weakness to the harsh Vermont Climate. Stone Matrix Asphalt (SMA) is a new pavement treatment that has the potential to provide greater durability to heavy traffic loading, and longer service life.



Methodology or Action Taken

An experimental feature section of SMA was included in the Sharon-Bethel interstate project, so we can compare it to the traditional Superpave Type IV. Loose mix performance samples, along with core performance samples have been tested for rutting and cracking. Pavement Roughness and Rutting is measured annually. Additional coring will be taken in 2022 to monitor the aged performance.

Conclusions or Next Steps

Initial performance testing indicated the mix had better cracking resistance, while it did have slightly higher rutting than conventional Superpave likely due to initial consolidation. Initial test from roadway cores indicated good rutting performance.

We are awaiting cores from the 2022 season, which will be tested for air voids, to compare to those from construction, and test for rutting and cracking performance tests. A site visit will be used to determine if there are areas of early distress, and help us determine the future application of SMA.

Potential Impacts and VTrans Benefits

If SMA is successful, it would serve as a new pavement treatment for the highest demand segments of Vermont's roads. Extending the lifespan of the highest demand segments would result in less frequent maintenance project, longer time till reconstruction, and could dramatically increase the return on investment in our paving program.