

MATERIALS & RESEARCH DIVISION

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RESEARCH UPDATE

NUMBER U90-4

NEED FOR PAVEMENT SCARIFICATION

References - Work Plan 86-R-3, U87-6

Purpose - To determine if it is necessary to scarify an existing bituminous pavement prior to overlaying it with additional subbase material and a new pavement system to insure there is no slippage or other distortion of the overlay materials.

History - Two 1,000 foot test sections were left unscarified on Vermont Route 100 (Project Stowe-Morristown F029-1(9)(S) in 1986. The test sections are located in Morristown at MM 0.426-0.615 and MM 1.561-1.75.

Reconstruction in the non-scarified test sections included placement of 6" of subbase of gravel, 3" of plant mixed base course, 1 1/4" of Type III binder and 3/4" of Type IV surface course.

The scarification treatment on 1.73 miles of the project resulted in an average size of 1 square foot or less on 50% of the bituminous pavement with the remainder ranging up to 1 by 3 lineal feet in dimension.

Cost Information - The pavement scarification was bid at \$1.50 per square yard for a total of 23,750 square yards.

Initial Performance - The following information summarizes the condition of the pavement at scarified and non-scarified test locations through three years of service.

Pavement Cracking (in lineal feet per 100 feet)

	Preconstruction (5/86)	3 Year Evaluation (6/89)
Non-scarified	774	85
Scarified	776	94

Pavement Rutting (in 16ths of an inch)

Non-scarified	7.6	2.6
Scarified	7.5	3.2

MAYS Roughness (in inches per mile)

The trailer mounted MAYS meter was not available for testing prior to the reconstruction of the project.

	2 Year Evaluation (6/88)	3 Year Evaluation (7/89)
Non-scarified	68	80
Scarified	62	84

Miscellaneous

There was no visible sign of any shoving, rippling or other pavement distortion in the 1,000 foot non-scarified sections.

Preliminary Conclusion - Field measurements recorded to date suggest there has been no reduction in performance on the roadway sections where the underlying pavement was not scarified.

The elimination of the scarification requirement should be considered on future projects which are reconstructed to a similar standard. The resulting cost savings could be used to increase the pavement design thickness.

Follow-Up - Annual inspections will continue for the life of the project and reports will be prepared on a biennial schedule.

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