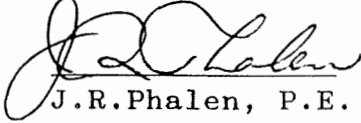


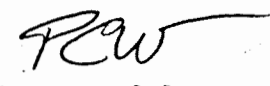
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June 4, 1987

Update No. 87-9

Page 1 of 2

MATERIALS & RESEARCH DIVISION

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R E S E A R C H     U P D A T E

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SUBJECT: "ULTRAPAVE" Latex Modified Pavement on Vt. 12 Worcester

REFERENCE: Report No. 86-1

HISTORY: In September of 1984 approximately 150 tons of bituminous concrete mix modified with Ultrapave was produced and placed on the northbound lane of a section of Vt. Rte 12 near the Worcester/Elmore town line between MM 0670 and MM 0701. Standard bituminous concrete was placed on the southbound lane as a control. The project area had been severely damaged by flooding in June of 1984 and the project, which was carried out as an emergency repair, included replacement of embankment, subgrade, subbase and pavement at several locations. There was no significant problem with the production or placement of the 1" course although several "fat spots" were found which stuck to the compaction roller then pulled out leaving small "pockmarks" in the surface. Survey results through September of 1985 did not reveal any significant difference in performance between the two mixes. Initial results were reported in Report No. 86-1, dated Jan. 20, 1986.

STATUS: A crack count and rutting depth survey was performed on May 5, 1987. Wheel track depths in standard mix ranged from 1/16" to 4/16" while depths in modified pavement ranged from 1/16" to 9/16". Significant differences in cracking in three test areas has occurred. The ratio of cracks (length) in modified mix to standard mix in test section 1 was 2 to 1. In test section 2 it is 12 to 1 and it is 18 to 1 in test section 3.

Field evaluation of the reasons for this difference revealed that along the northbound lane in test section 1 the most numerous and significant cracking is along the shoulder line in an embankment. There is also an area with numerous transverse cracks which involve both lanes. The appearance is of a collapsed culvert although there is no culvert at that location. In test section 2 there are many longitudinal cracks in the modified pavement within 2 feet of the centerline with almost none in the standard mix. Again this is an embankment section. In test section 3 a series of cracks along centerline throughout the section and additionally a series of cracks along the shoulder line, all longitudinal, cause the lopsided ratio.

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R E S E A R C H    U P D A T E

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ULTRAPAVE U87-9;Cont.

June 4, 1987

Page 2

It is believed that the failures are not in the pavement but in the underlying embankment which was placed under emergency conditions by crews striving to restore service rapidly throughout central Vermont following the flood damage.

SUMMARY: There was no detectable difference between the performance of the latex modified and standard pavements on this experimental project other than that believed to be caused by embankment settlement or slippage.

PROJECTION: Although informal monitoring will continue, no valid conclusions about this product's performance can be expected due to the uncertainties about the road's substructure. No further formal evaluation or reporting is anticipated.

DIST: A,B,D,E,F, DTA 6