Reviewed by:
Robert F. Cauley
Robert F. Cauley, P.E
Materials and Research Engineer

Prepared by:
P. L. Carter
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RESEARCH UPDATE

U 96-18

COLD RECYCLED BITUMINOUS PAVEMENT TROY-NEWPORT, VT 105

REFERENCES:

WP 92-R-8, Research Report 94-3

INTRODUCTION:

This report describes the performance of cold recycled bituminous pavement (CRBP) which was placed on VT 105 in the towns of Troy and Newport. An analysis of pavement performance based on collected data is presented herein.

PROJECT DESCRIPTION:

Troy-Newport project F 034-2(10) began at MM 5.730 in Troy and continued easterly for 5.274 km to MM 5.682 in the town of Newport. Constructed in 1992, the project included 100 mm of cold in-place recycling, a 45 mm Type II bituminous binder course, and a 30 mm Type III bituminous wearing course. Also placed was a 75 mm standard overlay (SO) in two lifts, Type II and Type III, which provides a control section for comparison with CRBP.

Seven test sites were established on the project, five in areas of CRBP and two in areas of SO. Each year these sites are examined and measured for cracking, rutting, and Mays ride roughness.

PROJECT HISTORY:

The project was completed in the summer of 1992. After one year of service, the pavement developed longitudinal cracking, typically 1.0 m or 2.5 m offset from the centerline. Project participants hypothesized that the cracking was caused by the screed and was further exacerbated by the use of a "stiffer" 75 blow Marshall mix design. Since cracking attributable to these causes is not relevant to the effectiveness of the CRBP process, the offset centerline cracking has been excluded from the tabulated crack count.

All units in metric except mile markers/mileage references and supplier's costs.

Metric

OBSERVATIONS:

The following table compares the performance of the two pavement treatments after four years of service.

TROY-NEWPORT F034-2 (10) 1996 PERFORMANCE		
DISTRESS TYPE	CRBP SITES	STANDARD OVERLAY SITES
CRACKING (m/100 m)	115	93
RUTTING (mm)	2	1
MAYS (m/km)	101	80

The values presented above show no appreciable difference in performance between CRBP and the SO. As suggested, both pavement treatments appear comparable in terms of cracking, rutting, and Mays ride roughness.

CRBP was placed at a cost of $8.53/SY, while the SO was placed at a cost of $5.46/SY. Based on these unit costs, the CRBP pavement should increase service life by approximately 40% to be equal in value to the SO. To date, the CRBP placed on the Troy-Newport project has yet to show superior performance when compared with the standard overlay.

FOLLOW UP:

Pavement surveys will continue on an annual basis until firm conclusions can be drawn as to the anticipated service life of CRBP and its relative cost effectiveness.