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June 18, 1997



RESEARCH UPDATE

Update U97-1

GLASPHALT PAVEMENT PERFORMANCE ON VT 12

REFERENCE:

WP 92-R-20, Reports 92-4, 93-8

PURPOSE:

This update documents the performance of waste crush glass utilized as a portion of the coarse aggregate in a bituminous surface course placed on VT Route 12 in Hartland, Vermont.

HISTORY:

Approximately 0.77 km (0.48 miles) of the southbound lane of VT 12 (MM 0.12 to 0.60) were paved with a glasphalt surface course on July 31 and August 3, 1992. There were no special problems noted during the production or placement of the material. Inspections performed in November 1992, and April and September 1993, indicate little or no measurable rutting or cracking.

FIELD PERFORMANCE:

The following table presents the field performance of this particular project:

	Cracking (m/100 m)	Rutting (mm)	IRI (m/km)
1992 (Pre Construction)	292	9.5	3.90
1992 (Post Construction)	0	0	3.37
1993	0	0	1.27
1994	25	0	1.71
1995	31	0	1.45
1996	32	0	1.67

Overall the test results are within acceptable standards. It is interesting to note that the majority of the cracking appeared after two years, with only seven more feet appearing two years later. As a comparison, the cracking noted on this project (32 m/100m) is considerably lower than the average of that noted on three randomly selected standard overlay projects (175 m/100m).

The lack of any significant rutting after four years of service is comparable to the rutting experienced on standard AC-20 overlays. One of these standard overlay projects exhibited slight rutting, while the rest showed none at all. IRI readings for the glasphalt have changed very little from 1994 to 1996. The 1996 IRI reading of 1.67 m/km is comparable with a 1.71 m/km reading experienced in the AC-20 overlay sections. Locked wheel friction tests taken 50 days after paving indicated little or no difference in skid resistance between the standard mix and glasphalt, since the skid value for both treatments was 48. Based on these observations, it appears that the glasphalt treatment is currently performing above the level expected for standard bituminous concrete.



Glasphalt surface, August 9, 1995 (Note the colored glass)

FOLLOW UP

The project will continue to be monitored as part of the annual pavement life survey, with an emphasis on observation of cracking, rutting, and pavement roughness.