

MATERIALS & RESEARCH DIVISION

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RESEARCH UPDATE

Update U94-10

3M SERIES 380 AND 350 TAPE
ROUTE 67A, BENNINGTON

REFERENCE:

Work Plan 88-R-4, Research Updates U88-10, U90-2, U90-6

HISTORY:

On September 6, 1990, 3M Series 380 and 350 Tape was installed on VT 67A in Bennington. The tape was furnished by 3M as replacement for material which had failed on an open graded pavement on I89 in Colchester the previous year.

The site on which the tape was installed is a heavily travelled urban highway which had an ADT of 6950 in 1990. The material was inlaid, per 3M's recommended method of installation.

Three test sites were set up, two with 3M Series 380 and 350 Tape and one with Pavemark Alkyd Thermoplastic. The materials at each site are as follows:

	Edge Line	Center Line
Test Site (TS) 1:	3M 380 Tape	3M 351 Yellow 3M 381 Yellow (skips)
Test Site (TS) 2:	3M 380 Tape	3M 351 Yellow 3M 381 Yellow (skips)
Test Site (TS) 3:	Pavemark Alkyd Thermoplastic (all)	

STATUS:

On the dates indicated, retroreflectivity readings were taken on each of the materials. The averages (in millicandellas) are listed below:

Date	380		351		381		Thermoplastic	
	TS1	TS2	TS1	TS2	TS1	TS2	White TS3	Yellow TS3
9/6/90	894	692	489	426	751	584	460	342
10/12/90	584	472	277	240	582	540	386	---
5/10/91	461	263	85	93	306	335	100	199
8/9/94	140	115	123	105	103	99	144	121

All readings were taken in the same location on the road as the previous tests.

Slight wear was observed on the tape sections adjacent to drives and parking lots. These losses were not significant and the pavement markings were still readable. The thermoplastic section had slight wear, but letters and symbols, as well as long lines, had remained intact. Overall, the wear suffered by the 3M Tape was comparable to the wear suffered by the thermoplastic.

COST:

The current material cost of 4" wide 380 Tape is \$1.33 per linear foot.

FOLLOW UP:

As of 1994, 3M had discontinued the 350 Series Tape, replacing it with the 380 and 381 Tape. 3M has also replaced the glass beads previously used for retroreflectivity with ceramic beads.

CONCLUSIONS:

The performance of both the 3M 380 and 350 Tape equals that of standard thermoplastic. Based on the retroreflectivity and durability noted, the current material (Series 380 and 381) should be approved for use on future construction projects.

DIST: A, B, C, D, F