Reviewed By:
J. R. Phalen, P.E.
Materials & Research
Engineer

Prepared By:
Peter C. Winters
January 29, 1988

RESEARCH UPDATE

NUMBER 88-6

DURASTONE RAISED PAVEMENT MARKERS

REFERENCE:

Work Plan 82-R-15, Research Report 85-11

HISTORY:

During August of 1983, 54 Durastone raised pavement markers were installed along the centerline of the SB lane of I89 in the area of the Waterbury interchange #10 and in the gore area of the SB off ramp.

Problems were encountered in cutting the proper size and depth hole for installation of the markers. Installation, cost and performance through May of 1985 were reported in Research Report 85-11, published in Dec. of 1985. Reflector damage was assessed after one, two and three winters of exposure. Two winters were reported in the referenced report. Updated condition information is displayed in Table 1 below.

TABLE 1

CONDITION (% of lens nonfunctional)		PERCENTAGE OF UNITS 1 Winter	2 Winters	3 Winters*
EXCELLENT	0%	46	22	17
GOOD	up to 25%	35	39	52
FAIR	26 to 75%	11	13	22
POOR	above 75%*	8	26	9

*Manufacturer's representative replaced all damaged reflectors after 2 winters.

STATUS:

Close examination in May of 1986 revealed that all units were still present. Five of the original 54 units were painted over and thus non-functional. It was concluded that the marker housings were generally able to resist significant damage while being exposed to approximately 600 snowplow passes per winter. The reflector inserts did not fare as well with 54% of the reflectors showing reduced effectiveness due to moderate to severe damage after one winter and only 22% being fully effective after two winters. The reflectors' short life is due to a number of factors and not to carbide tipped

(over)

snowplow blades alone. Moisture and tire traffic are also important. Close examination has disclosed that many reflectors are virtually damage free and show no significant abrasion yet do not reflect light due to darkening of the silver background. This darkening may be due to seepage of water and extremely fine soil into the unit where delamination has ocurred between the back of the unit and the plastic lens. The dark area increases in size with time until the unit loses all effectiveness.

Replacement reflectors are available at a cost of $3.05 per unit. Labor costs could be substantial due to the need for traffic control.

CONCLUSION:

Due to the need to replace lenses annually in order to maintain an acceptable level of efficiency, use of these markers can be recommended only in high accident locations or areas where geometric conditions require enhancement of standard traffic marking systems.

PROJECTION:

Although this product functioned slightly better than another similar product, no further evaluation or reporting will be made because Durastone raised pavement markers are no longer manufactured.

Distribution A,B,D,E,DTA-6