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February 15, 1994
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RESEARCH UPDATE Number U 94-3

LUMILINE EPOXY PAVEMENT MARKING

REFERENCE: WP No. 93-R-25

PURPOSE:

The current policy of the Vermont Agency of Transportation regarding pavement marking dictates the use of thermoplastic for all applications on new flexible pavement and standard paint for old flexible pavement or Portland Cement Concrete.

Regardless of its current policy, it is in the best interest of the Agency to continue to evaluate alternative pavement marking materials. This report discusses one such evaluation.

HISTORY:

The use of epoxy based paint as a durable traffic marking material is not entirely new to Vermont. On September 18 and 19 of 1984 a total of 87,699 linear feet of Super Lifeline Epoxy Pavement Marking, manufactured by Linear Dynamics Inc. of Montgomery PA was applied to a segment of US Route 4 in Castleton and West Rutland. That product showed significant distress after five months, and its total service life was estimated at three years. Overall, its basic life cycle cost was judged to be approximately double that of standard paint. No further trials of any epoxy pavement marking material were initiated.

During mid-summer of 1993 the Agency was contacted by Traffic Markings Inc. (P.O. Box 515, Franklin, MA 02308, Phone (508) 528 5727, FAX (508) 528 6273), requesting permission to apply an epoxy marking system in place of the specified standard traffic paint for a short section on the Guilford-Springfield, IR 091-1(18) c/2 project.

PRODUCT DESCRIPTION:

The product applied was Lumiline II epoxy marking material. It is a two part, 100% solids system, combined in a two to one volumetric ratio. The first component contains the marking pigment (white or yellow) and an epoxy resin. The second component (the curing agent) is a modified aliphatic amine. The product is hot sprayed onto asphalt or concrete pavement surfaces and immediately dressed with glass beads. The manufacturer, Accent Stripe, Inc. of 3275 Benzing Road, Orchard Park, New York 14127, Tel. (716) 823 7704, specifies installation on clean and dry pavement with a minimum surface temperature of 50° F while ambient temperature is at least 45° F and rising.

FIELD TRIAL AND INSTALLATION:

The product was installed on project IR 091-1(18) c/2 on both the center and edge lines on October 3, 1993 with a state-of-the-art, truck mounted, airless spray. The specific locations were as follows:

MM - MM	DISTANCE	LANE	PAV'T COND.
35.055 - 34.955	527'	SB RT.	NEW
34.955 - 34.902	280'	SB RT.	OLD
34.902 - 34.700	1016'	SB RT.	NEW
35.055 - 34.955	527'	SB LT.	NEW
34.955 - 34.889	349'	SB LT.	OLD
34.889 - 34.700	947'	SB LT.	NEW
34.700 - 35.055	1823'	NB&SB LT&RT	NEW

Average ambient temperature was 40° F during the installation . Cold conditions substantially increased the material drying time, requiring special measures by the contractor to keep traffic off the new striping until drying was complete.

COST:

The epoxy marking material was applied at the same \$0.16/lf contract price as for the standard paint. The substitution at no change in price will preclude an estimate of the life cycle cost for this material; therefore cost/benefit comparisons of this product with either thermoplastic or standard paint will be difficult to derive.

STATUS:

Due to the late application date, there has been no opportunity to visually inspect the new epoxy markings or to obtain initial retro-reflectivity values. The first inspection will take place as early as possible during the spring of 1994. Retroreflectivity losses and durability will be compared to those of standard paint and thermoplastic products.



Fig. 1
Truck Mounted,
Airless Spray