

OFFICE MEMORANDUM

MICHIGAN
 STATE HIGHWAY DEPARTMENT
 JOHN C. MACKIE, COMMISSIONER

November 9, 1964

To: Traffic Control Devices Committee:

H. H. Cooper, Chairman

J. J. Becker

J. L. Byers

W. W. McLaughlin

H. J. Rathfoot

F. W. Gillespie

From: A. J. Permoda

Subject: Thermoplastic Pavement Markings on W. P. Chrysler Freeway
 (Projects BI 82111C, C24; BI 82251C, C34). Research Project
 R-47 G-36(17a). Research Report No. R-481.

In accordance with verbal instructions, the Traffic Paint Subcommittee and Research Laboratory Division personnel observed the application of thermoplastic striping by the Chicago division of The Perma-Line Corp. from June 18 through 24, 1964. "Supplemental Specifications for Thermoplastic Pavement Markings" dated May 26, 1964 governed the application. These specifications contain a guarantee requirement covering the service life of the pavement markings.

Application included the following operations:

1. Clean area to receive markings by brush-off blast cleaning.
2. Prime cleaned area with a synthetic resin compound.
3. Re-prime with a two-component epoxy compound.
4. Apply thermoplastic marking with a gas-heated, hand-guided applicator (Fig. 1).

The thermoplastic marking received an overlay complement of glass beads, in accordance with the specification requirements, to give it immediate night visibility. The observed portion of the application proceeded without trouble, yielding satisfactory skip lines as shown in Fig. 2. Most marking was applied on concrete, though some was applied on bituminous roadway in the ramp areas. The applied markings dried track-free in less than 5 min, well within the 15-min specification requirement.

It was noticed that the applied markings had a fairly large number of small gas inclusions, somewhat similar to air-entrained concrete. According to application personnel, this was a deliberate part of the formulation.

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District personnel stated that the striping sub-contract was for about \$19,000 and covered approximately 44,000 lin ft of 4-in. wide markings applied 1/8-in. thick on about 2.7 miles of Freeway pavement.

Several rapid surveys have been made of the roadway markings. One made on August 27, 1964, after two months of service, showed that the domes of the gas inclusions had worn away leaving a pore-marked plastic (Fig. 3), which did not detract from the general appearance. S. J. Vracan of the Metropolitan office made an inspection in September 1964, and stated that the markings showed no noticeable deterioration. R. L. Snider of the Research Laboratory made an inspection in mid-October, generally confirming Vracan's findings though he found a few markings showing incipient fraying on the southbound lanes in the Ferry-to-Madison Sts. area. He reported that night visibility of the markings was erratic, varying from very good to just fair, with the major portion tending towards the fair rating. This was subsequently confirmed by the writer. Continuing inspections will be made and reported.

OFFICE OF TESTING AND RESEARCH

A. J. Permoda, Chairman
Traffic Paint Subcommittee

AJP:nl

Attachment

cc: J. E. Meyer

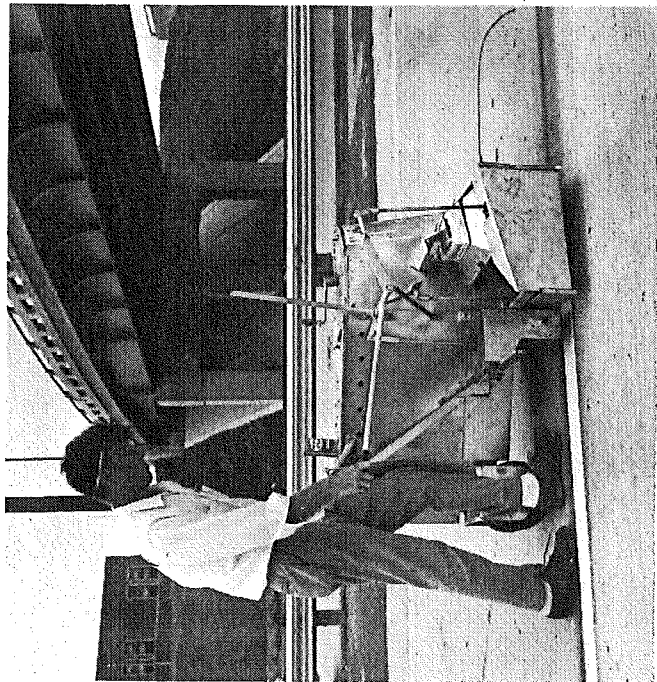


Figure 1. Perma-Line equipment applying thermoplastic striping to blast cleaned and primed concrete (visible as a dark band in front of machine).

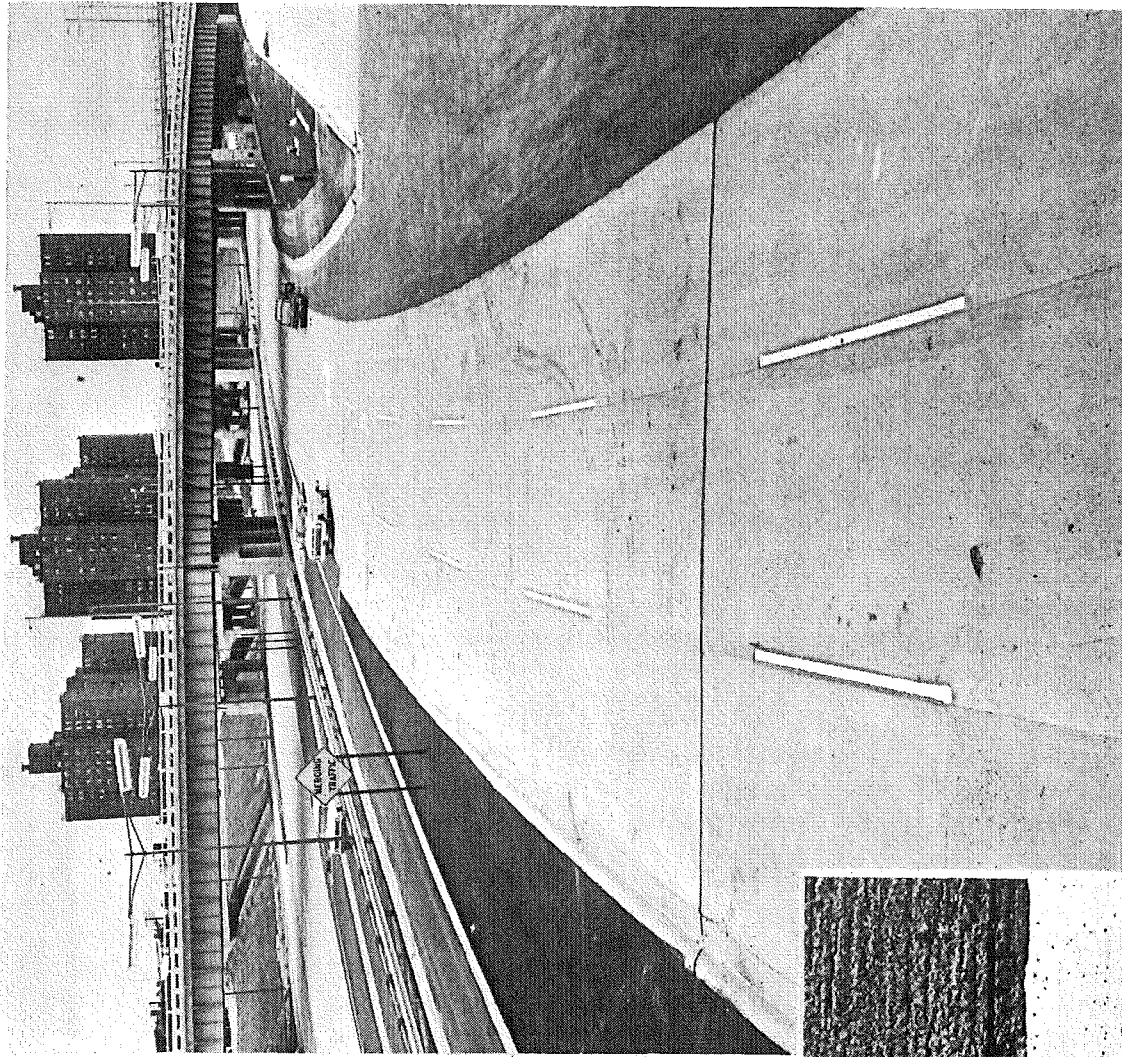


Figure 2. Appearance of newly applied markings on northbound lanes, north of Gratiot Ave. Dark fringe around markings is primer. Skip pattern is standard 20 ft of line and 30 ft of skip.

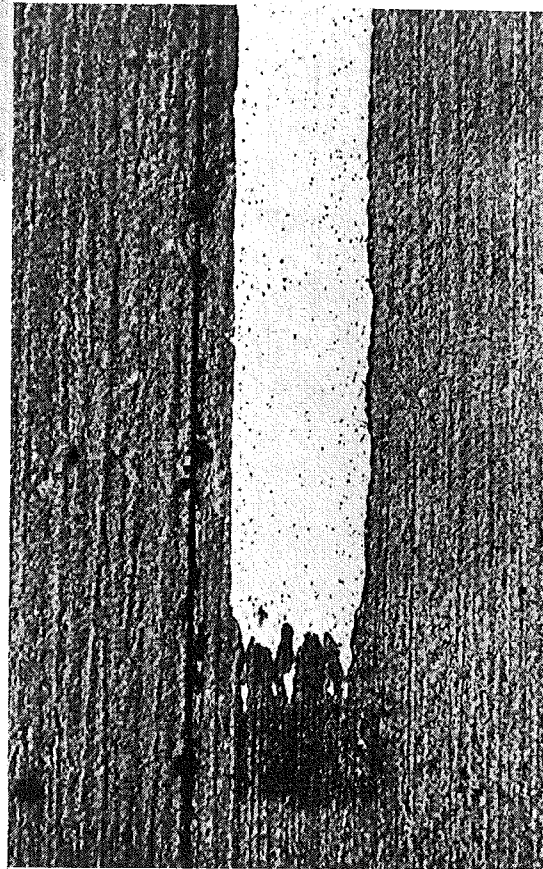


Figure 3 (left). Close-up of striping after two months of service showing that distinct pores have developed from original gas inclusions.