

# OFFICE MEMORANDUM

MICHIGAN

STATE HIGHWAY DEPARTMENT

JOHN C. MACKIE, COMMISSIONER

139

March 20, 1962

To: E. A. Finney, Director  
Research Laboratory Division

From: A. J. Permoda

Subject: Lenz's Proprietary Paints for Creosoted Wood Posts and for Structural Steel. Research Project 49 G-50(2). Research Laboratory Report No. 376.

In compliance with R. L. Greenman's letters of March 16 and June 5, 1956 to M. H. Lenz of Wakeman, Ohio, the Research Laboratory Division conducted screening tests on a proprietary white and a proprietary aluminum paint submitted by Mr. Lenz for evaluation as coatings on creosoted wood posts and also on structural steel.

## Tests

1. Analytical: Physical tests show both paints to have enamel type compositions. Both were hard to apply by brush since they dried quickly. Solvent appeared to be a mixture of methyl-ethyl ketone and xylol. IR spectrum of resin in white paint was similar to that of an acrylated or styrenated alkyd.

2. Creosoted Wood Posts: Test white paint was evaluated against specification white No. 6B-4 as a coating on creosoted wood posts. Two coats of each paint were applied on separate posts, previously creosoted, which were then field installed at the US 27 weigh station south of Lansing. At time of installation and after about 5 months of field service, the proprietary white paint proved significantly more bleed resistant than No. 6B-4 white, as shown in Figure 1. Further evaluations were not made because test post were damaged in service and maintenance repainted.

3. Steel Coating: Test paints were evaluated as a 2 coat system on a steel base against a specification system. The test paints, using the white as a prime coat and aluminum as topcoat were applied to a portion of angle iron with remaining half painted with specification system consisting of No. 2A Brown prime and No. 5B Aluminum topcoat. The angle iron was then exposed on roof of laboratory for about 4-1/2 years. Figure 2, giving condition of test specimen at end of this exposure, shows that test paints were in good condition and gave about equivalent service to specification system in test exposure.

## Conclusions and Recommendations:

1. Test proprietary white paint, based on a fast drying modified alkyd vehicle, proved noticeably more bleed-resistant as a coating on creosoted wood posts than the comparative specification white paint No. 6B-4.

The paint is not recommended for use on posts by maintenance crews because its fast drying gave it poor brushability and also could be expected to lead to

excessive skinning in partially emptied containers. Its use would require that special solvents be carried for brush clean-up.

A paint embodying some of the above's good bleed-resistance and fewer of its undesirable features could be formulated for Department use if such need were dictated.

2. Test proprietary paint system of white prime and aluminum topcoat performed well on one structural steel specimen exposed for about 4-1/2 years on roof of laboratory. It gave approximately equivalent service to comparative system consisting of a prime coat of No. 2A Brown and topcoat of No. 5B Aluminum.

The fast drying of the proprietary paints would prevent their application by brush on large area surfaces of structural steel, and for that reason and because they do not appear superior to current Department system the test paints are not being recommended for coating of structural steel.

OFFICE OF TESTING AND RESEARCH

A. J. Permoda, Supervisor  
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AJP:cgc  
attachment

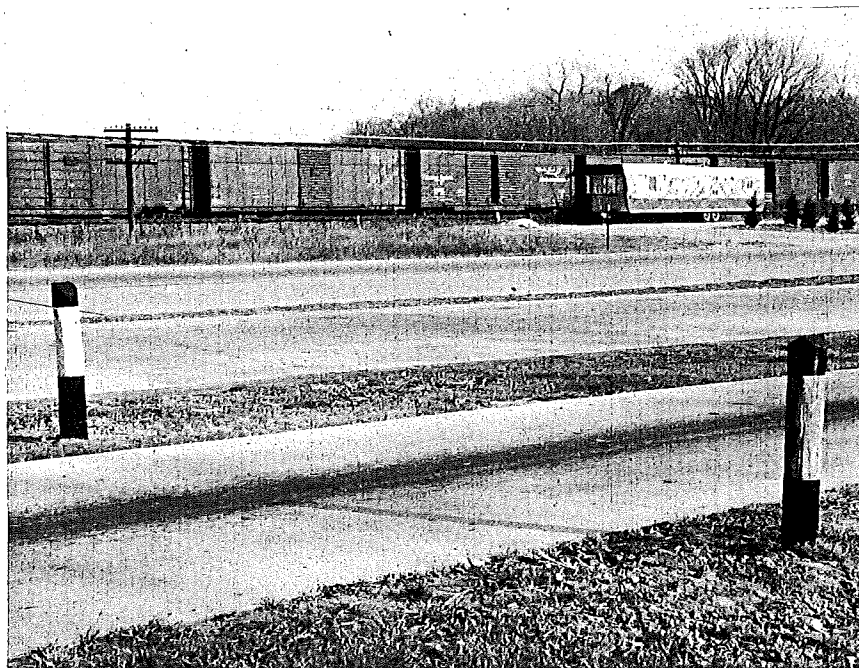


Figure 1. Condition of white coatings on creosoted wood posts exposed for about 5 months on US-27. Left post was coated with test proprietary white paint while right post, showing considerable discoloration or bleeding, was coated with No. 6B-4 white paint.

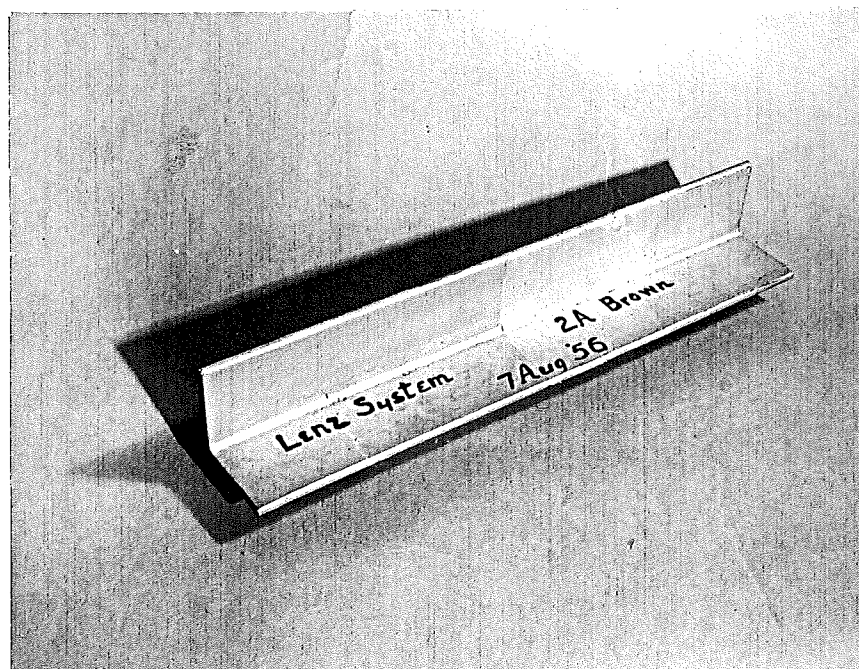


Figure 2. Condition of coatings on steel angle iron exposed for about  $4\frac{1}{2}$  years on roof of laboratory. Left half had proprietary test paints or white primer and aluminum topcoat while right half had comparative system of No. 2A Brown primer and No. 5B Aluminum topcoat. Both systems appear in good condition.