Research Report Documentation Page

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Evaluation of "Wasser" Single Component Moisture Cured Polyurethane Paint for Bridge Maintenance Overcoating

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*see supplementary notes

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14. Supplementary Notes

15. Abstract

Purpose and Need

All bridge structural steel erected or painted in North Dakota before 1985 was coated with lead based paint. This paint was applied over surfaces with little preparation. Abrasive blasting is currently being specified for repainting these bridges because it accomplishes two things:

1.) It optimizes the service life of the new paint system by totally removing the existing paint, millscale, and contaminants.
2.) It optimizes the bond of the new paint system by providing a roughened surface.

Abrasive blasting has become expensive since lead based paints have been declared toxic and subject to regulation. Environmental and worker protection regulations mandate costly measures such as enclosed work areas and collection and proper disposal of all blasting residue.

Objective

The objective of this study is to determine if a single component moisture cured polyurethane paint overcoat system such as Wasser, which is marketed as an over coating system requiring minimal surface preparation, is a viable alternative to our currently specified system.

Scope

The experimental coating system has been incorporated into Project IM-1-094(017)156. The bridge selected for this system is bridge number 94-160.649L which is the westbound Haycreek separation structure on Interstate 94 located between reference markers 160 and 161 within the city limits of Bismarck. The control structure is bridge number 160.649R which is the eastbound Haycreek separation structure on Interstate 94.

The experimental coating was evaluated for a period of five years. It was evaluated for ease of application, cost, and for visible coating distresses and its performance was compared to the control structure.

Summary

Both structures have some staining associated with the forming of rust, however the control structure (eastbound structure) shows more signs of rust starting to appear through the paint.

There did not seem to be any other visible paint failures with either the "Wasser" single component moisture cured polyurethane paint on the westbound structure and the standard system on the eastbound structure.

Recommendation

From this study, it has been determined that a single component moisture cured polyurethane paint overcoat system such as Wasser, which is marketed as an overcoating system requiring minimal surface preparation, is a viable alternative.

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