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Evaluation of Wet Reflective Elements for Pavement Markings

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*see supplementary notes

North Dakota DOT
Materials and Research Division
300 Airport Road
Bismarck ND 58504-6005

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North Dakota DOT
Materials and Research Division
300 Airport Road
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14. Supplementary Notes

15. Abstract

Purpose and Need

The harsh weather conditions of North Dakota demand frequent replacement of pavement markings. Water based pavement markings are replaced every year. Epoxy pavement markings are constructed with the expectation that they will last for 3-5 years when applied to the surface with proper application techniques. However, epoxy pavement markings may not last the projected 3 to 5 years primarily because of snow plow activity. This study will compare the performance of surface applied and grooved liquid pavement markings, based on presence and retroreflectivity. The benefits of constructing pavement markings in a groove is that the marking will be protected from snow plow damage.

Objective

The objective of this project is to compare the performance of surface applied pavement markings and grooved pavement markings using water-based paint and epoxy. This project will also supplement the previous project *Evaluation of Wet-Reflective Elements for Pavement Markings,* ND 2010-01, by evaluating the effectiveness of 3M AW Elements in a groove.

Summary

The pavement markings exhibited the following general characteristics:

- The white and yellow grooved water-based paint and epoxy, both with standard glass beads, had higher dry retroreflectivity than the surface applied epoxy with standard glass after three winters.
- The white and yellow grooved AWP with AW elements had less dry retroreflectivity than the surface applied epoxy with AW elements after 2 winters.
- The reflective media is in better condition in the grooved epoxy sections than the surface applied epoxy sections
- Grooved white epoxy with AW elements had nearly equal dry retroreflectivity as surface applied white epoxy with AW after three winters.
- Grooved yellow epoxy with AW elements had higher retroreflectivity than the surface applied yellow epoxy with AW elements after three years.

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