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Experimental Feature "PavePrep" Pavement Interlayer To Halt Or Retard Reflective Cracking

6. Report Type

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*see supplementary notes

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13. Sponsoring Agency Name and Address

North Dakota DOT
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14. Supplementary Notes

15. Abstract

Purpose and Need

PavePrep is a high-density joint sealing membrane manufactured by the PavePrep Corporation of Harrison, Ohio. The product consists of a flexible high-density asphaltic membrane laminated between a nonwoven polyester geotextile and a woven polyester geotextile. This project will evaluate effectiveness of PavePrep on pavement cracks under an asphaltic overlay to retard reflective cracking.

Objective

To evaluate PavePrep as astress-relief interlayer which is used in overlay applications to control reflective cracking

Scope

The research section is located on Highway 17 near reference point 123 by Grafton, North Dakota. The section will consist of one 1,000' test section and one 1,000' control section. The percentage of reflective cracks that appear in the HBP will be used to determine the success of the PavePrep fabric. The research and control section will be evaluated annually for five years.

Summary

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The control and PavePrep sections are both exhibiting reflective cracking. The PavePrep section has 9% less reflective cracks than the control section. This is after four years of service. Approximately 39% of the original cracks have reflected to date. Cores taken in 1996 and 1998 verify that the cracks are reflecting through the PavePrep and 85% of the PavePrep was torn. Based on these cores, PavePrep is not providing good protection from moisture intrusion into the roadway on this asphalt project.

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Almost all of the reflected cracks occurred in the second year. Both the control and PavePrep sections reflected cracks at the same rate in 1996, 1997, and 1998. Both sections are equal at this time. Approximately 22% of the original joints have reflected to date in each section. Cores taken in 1996 and 1998 verify that the cracks are reflecting through the PavePrep. It seems that the joints in the concrete do not move as much as cracks in the asphalt project because 65% to 75% of the PavePrep was not torn in the concrete project. About 65% to 75% of the PavePrep is preventing moisture intrusion into the roadway on this project.

It can be said that PavePrep does not prevent reflective cracking or slow it down very much. PavePrep does provide some moisture barrier protection when used on concrete joints with an asphalt overlay. PavePrep used on asphalt cracks with asphalt overlay provided unsatisfactory results.

Recommendation

PavePrep does not control reflective cracking on either concrete or asphalt. The only benefit PavePrep provides is some moisture protection. PavePrep does not appear to retard reflective cracking. Recommend that PavePrep not be used to control reflective cracking.

16. Key Words

Pavement Asphalt
Reflective Cracks
Overlays
Pave prep

17. Distribution Statement

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