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Evaluation of an Experimental Portland Cement Concrete Pavement Project

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11. Author(s)/Principle Investigator(s)

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12. Performing Organization Name and Address

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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

Concrete pavement has been utilized in every state due to its durability. However, the pavements constructed in the last 10 to 20 years appear to be less durable than those constructed previously. The only properties normally targeted are strength and air content. These two factors alone can not guarantee durability in PCC pavement. The properties currently targeted are found using what is known as a "recipe". There is need to change the design philosophy and look at other properties besides strength and air.

Objective

The objective is to move toward an end result specification for concrete paving by moving away from recipe mixes to a mix design philosophy with target properties.

Scope

The scope was to construct an experimental recycled portland cement concrete pavement. The experimental pavement was broken up into test sections with each having different design parameters. Individual items to be evaluated over the long term are as follows: Distresses in the pavement, overall pavement condition, ride, and long term compressive strength. The project will be evaluated for a period of ten-years with reports every two years.

The location of the project is on Interstate 29 in the southbound lane from reference point 163 to 175. This section of the roadway is located approximately 22 miles north of Grand Forks, ND.

Summary

Results of the final evaluation indicate that all sections are performing well. Minor distresses are noted in all test sections. Ride characteristics remain very good. Sections containing water reducing admixtures seem to be performing slightly better than those without admixtures.

16. Key Words

Pavement Concretes
Aggregates
Admixtures
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17. Distribution Statement

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