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14. Supplementary Notes

15. Abstract

Objective

The objective of this research project is to evaluate concrete sealants to determine which sealant best prevents chlorides from entering micro cracks in concrete.

Scope

This research project has two parts; a literature review and State DOTs Survey for part one, part two involves the evaluation of sealers based on lab tests. Test data for the different sealants were combined to find the most adequate sealer for improving resistance to the deterioration of concrete properties.

Summary

The sealants were tested to determine how susceptible the concrete is to chloride after a sealant is applied. The different tests are as follows; water absorption in hardened concrete, scaling resistance of concrete exposed to deicing chemicals, freeze thaw tests, chloride ion penetration resistance, ability to seal cracks up to 0.2 mm in width, and electrical indication of concrete's ability to resist chloride ion penetration.

The different types of sealant used are Tamms Dural 335 (D335), Degadeck Crack Sealer (DCS), star Sealer (SS), Radcon Formula #7 (R7), and ChemTrete BSM-40 VOC (CT40). It was concluded that the most efficient sealer is Tamms Dural 335 for the cases of normal and fly-ash concrete mixes.

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