Productivity

Chemical Analysis of Concrete Cores by Extraction and Solubility
[Video](#)

Description

The chemical analysis of concrete cores by extraction and solubility is an internal test method that will save time and money as well as provide a safe testing alternative to analyzing concrete cores used by Maintenance and Construction and Materials to make decisions regarding concrete failures. This method concentrates on three phases, aggregate, paste and pores/voids to verify the reasoning for failure.

Benefit

This test procedure saves money by utilizing in-house laboratory equipment and keeping all related testing internal rather than sending it to an independent testing facility. It simplifies work by using a step by step process of evaluation and analysis without deviating from the work model. It saves time since all testing can be done internally and results can be quickly relayed to the appropriate MoDOT District Maintenance and Construction/Materials personnel. Safety is improved by offsetting the use of harsh chemicals with deionized water and a weak acid solution in the test procedure. This method gives our internal personnel guidance on ways to move forward with the concrete issue and take the necessary steps to correct them. Currently, no state agency utilizes this method for general concrete failures, other than petrographic methods. This method provides an overall thumbprint of the concrete core chemistry and assists in devising ways to look at new, innovative ways to solve these problems quickly and efficiently.

Materials and Labor

The total cost of materials is $10 with 3 hours of labor.

For More Information Contact

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Additional information, photos or videos can be seen by accessing Innovations Challenge SharePoint page at: http://sp/sites/tp/planpol/SitePages/InnovationHome.aspx