Statement No. 28

Arkansas State Highway and Transportation Department
Transportation Research Committee

RESEARCH PROBLEM STATEMENT

DATE: 09/09/2016 | **PROJECT AREA:** Materials

TITLE: ASR Behavior during Accelerated Bar Test Periods

PROBLEM STATEMENT:

Typically, specimen behavior for alkali silica reactivity (ASR) is recorded as a single expansion value at the end of the accelerated mortar bar test (ASTM C1260) period. ASTM C1260 testing is typically conducted over a 14 day period. Conversely, a modified testing procedure is needed to continually monitor alkali silica reaction (ASR) during the testing period and have the capability of extending the time period beyond 14 days. The testing method should have the capability of ending testing based on time or specified maximum strain values.

OBJECTIVES:

The testing approach will enable investigators to record test specimen behavior continually without disturbing the test specimen during the testing period. The testing approach will accurately assess aggregate potential for deleterious ASR behavior. Concrete experiencing ASR leads to pavement distress through excessive slab expansion and cracking. ASR mitigation is costly and state DOTs typically respond to ASR distress cases by pavement slab replacement. Therefore, an experimental testing approach that accurately predicts potential deleterious ASR expansion will result in significant state highway cost savings.

FORM OF RESEARCH IMPLEMENTATION:

Four approaches will be used to disseminate the study results: a final report to AHTD, guidelines summarizing the testing approach, a webinar presentation, and conference presentations.

REVIEWER: Joseph Jabo

Estimated Project Duration: 18 month

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Standing Subcommittee Ranking	Advisory Council Ranking	Statement Combined with Statement Number(s)
0	0	