RP 271 – *Implementing AASHTO TP 110 for Alkali-Silica Reaction Potential Evaluation of Idaho Aggregates*

- Project Description:
  Currently ITD staff rely on AASHTO T303 and/or ASTM C1260 to evaluate the susceptibility of aggregates to Alkali-Silica Reactivity (ASR). These tests have shown conflicting results depending on the length and type of the test even on the same aggregate source. A new test procedure, AASHTO TP 110, was recently developed to overcome the shortcomings of the current tests The AASHTO TP 110 test takes about 56 days to complete, with an additional 28 days needed in the case of slow reacting aggregates. This method has been found to provide good correlations with ASTM C1293 results, as well as field performance. This research project will use the AASHTO TP 110 method to provide better assessment of Idaho aggregates for ASR susceptibility. More importantly, this method can be used to optimize the mix design (e.g., replacing portion of cement with secondary contentious materials such as fly ash and slag, adjusting w /c ratio, etc.) to produce a mix that has a better resistance to ASR. As ITD is moving toward performance-based specifications, such application is quite important.

- Project Objective:
  The main objective of this study is to evaluate the advantages associated with implementing AASHTO TP-110 within ITD specifications to quantify the ASR potential of aggregate sources in Idaho. The baseline ASR susceptibility for Idaho aggregates will be established. ASR potentials quantified through the AASHTO TP-110 procedure will be evaluated in light of ASTM C1293 and ASTM C 1260 (AASHTO T 303) test results.

- Estimated Completion Date: December 31, 2019
- Budget: $135,000
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