

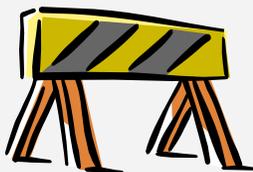
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BJO:JFS

Implementation of Alkali-Silica Reactivity (ASR) Testing Requirements for Fine Aggregates Used in Portland Cement Concrete for the 2012 Construction Season

This construction advisory serves to notify the MDOT project engineer that an agreement has recently been made between the department, FHWA, and industry to allow a phase-in period for ASR testing. This will permit the aggregate supplier sufficient time to complete the one-year ASTM C 1293 concrete prism testing for their respective fine aggregates, as described in subsection c.5.A of the Frequently Used Special Provision (FUSP) for Quality Control and Acceptance of Portland Cement Concrete (12SP602(F)).

Any contractor proposing to use one of the following options for the 2012 construction season must do so in writing to the MDOT project engineer for their approval. These options will be valid through December 31, 2012.

Option 1: Mitigation - A sand source would demonstrate (via ASTM C 1567) that they can mitigate the ASR potential with a minimum amount of supplementary cementitious materials (SCM's - fly ash or slag cement). A concrete producer would then be allowed to use this sand in any mix, without further ASR testing, as long as the mix design included the minimum amount of SCM identified.

Option 2: Historical testing - Several of the sand sources were tested within the last five years. This was industry-initiated informational testing, so they did not continue with annual testing. This one year test data would be accepted in 2012 until such time that their latest current one year testing becomes available.

Option 3: Historical usage - For the 2012 season, a sand source with a ten year history of concrete production on MDOT projects with no identified ASR problems would be considered non-reactive until such a time as their one year test data became available.

If option 3 is chosen, the aggregate producer must submit to MDOT, a sampling of minimum ten year old MDOT projects where their sand source has been used in the concrete mixture. This list will then be reviewed by MDOT with input from one representative of each, the Michigan Concrete Association and the Michigan Aggregates Association to determine whether there are historical signs of ASR. Additional projects may also be included for the ten year performance evaluation, as determined by any of the three members of the review panel. These additional projects may be used to better provide an objective disposition as to the sand source's level of acceptability for use on MDOT projects in 2012. The final disposition, however, will be made by MDOT.

Starting in 2013, the ASR requirements, as described in subsection c.5.A of the FUSP for Quality Control and Acceptance of Portland Cement Concrete (12SP602(F)), will apply. Any proposed concrete mix designs, thereafter, must be accompanied by current Test Data Certification for ASR testing of the fine aggregate that is proposed to be used in the concrete mixture.

Note that test results for ASTM C 1260 - Mortar Bar Test and ASTM C 1293 - Concrete Prism Test are valid for two years.

If any of the three options are approved for use, proper option-reference and accompanying documentation should be on file for each respective concrete mixture. Also, please keep in mind that once the 2012 ASR testing is completed, it is important that this current documentation be on file to ensure that federal funds are not jeopardized.

It is not expected that there will be any additional cost to the project as a result of this change.

Please share this information with consultants and local agencies within your area.