Tuesday, September 17, 6:00 pm  
3310 Newmark Civil Engineering Lab

Alkali-silica Reaction and Delayed Ettringite Formation: Diagnosis and Prognosis

Presented by Anthony F. Bentivegna, Ph.D.

Across North America, concrete infrastructure has been susceptible to the premature deterioration caused by alkali-silica reaction (ASR) and/or delayed ettringite formation (DEF). In new construction, prevention of ASR and DEF is possible if proper testing is done prior to construction and by maintaining low concrete temperatures during curing especially for DEF. However, these problems occur when material combinations (aggregates and cements) are implemented without fully understanding their compatibility through testing for the possibility of ASR or for DEF if the concrete temperatures exceed 158°F during curing. In this presentation, clarification on these two distinct mechanisms will be provided on when they occur individually and when they can occur concurrently. This presentation will detail the severity that the reaction has on premature concrete deterioration and the shortening of service life of concrete structures. A consultant’s perspective on the management of structures which have these durability concerns will be provided. Tools and techniques for diagnosing the cause of deterioration and the potential for continued deterioration will be discussed. Example case studies where these tools have been implemented will be demonstrated.

Anthony Bentivegna is a materials consultant at CTLGroup where he specializes in the characterization and implementation of cementitious materials and the mitigation of premature deterioration due to concrete durability problems. He has a B.S. from the Georgia Institute of Technology and a M.S. and Ph.D. from the University of Texas at Austin.

Anyone interested in concrete is invited! We will provide pizza and beverages before the meeting. See you there!  
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