Concrete Materials Seminar Announcement

Test Methods for Determining Physical Properties of Hardened Self Consolidating Concrete (SCC)

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Presented at:

The University of Hawaii at Manoa

Department of Civil & Environmental Engineering

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Abstract:

Tests for physical properties of SCC mixtures are developed, including tests for strength variation with depth, shrinkage, creep, and modulus of elasticity. Concrete at the top of seven-foot tall samples was found to be weaker than standard cylinders and concrete at the bottom of the samples was found to be stronger than standard cylinders. Stereology was used to analyze aggregate concentration along depth and no segregation along the depth of the tall samples was found. The modulus of elasticity of SCC was approximately 50-70% of that predicted by theoretical equations, but this may be due to the new experimental methods; further research is needed. New testing apparatus and loading frames were used for monitoring creep and shrinkage and they produced very reliable results. The shrinkage and creep results are based on nearly one year of data and are analyzed using bootstrap statistical methods. As a follow-up study, the shrinkage and creep data will be recorded for five years.

Biography:

David Mukai graduated with his B.S. and M.S. in Civil Engineering from the University of Hawaii in 1983 and 1985 respectively. He received his Ph.D. from the University of Washington in 1991. He is currently an Associate Professor in Civil and Architectural Engineering at the University of Wyoming and serves as the department's Undergraduate Program Director.