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High Performance Concrete Floors with Extended Joint Spacing

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Presentation Abstract

This presentation will cover topics that affect the shrinkage, cracking, and curling of concrete floors. Shrinkage of a typical concrete mix limits the joint spacing to very conservative numbers. Concrete mix design and specialty admixtures will allow for extending the joint spacing while minimizing the cracks. Eliminating certain portion of control joints means less maintenance which is desired to all owners. Such concrete floors are reinforced with macrofibers (steel or synthetic) for an improved crack control. Fibers can provide different levels of crack control and tensile/flexural capacity for a concrete section, depending on the type, dosage and performance. Standard tests are used for characterizing the performance of low shrinkage concrete and fiber-reinforced concrete and the test parameters are used for design and specification. ACI guidelines are reviewed in this presentation for high performance concrete floor construction.

Speaker's Biography

Amir Bonakdar is the business development manager for Euclid Chemical in the West. He has a Master's degree in structural engineering from the University of Tehran and a PhD degree from Arizona State University. Amir's academic and professional life has been dedicated to fiber-reinforced concrete (FRC) and concrete durability. He joined Euclid Chemical in 2013 and has been an active member of ACI, PCI, ASTM and SEA. He is a subcommittee chair for ACI 544 (FRC) and has chaired a new ACI design guide on FRC. He is also involved with ACI 201 (concrete durability) and ACI 360 (design of slabs on ground).

