

## Restrained Shrinkage Behavior of Self Consolidating Concrete

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**Abstract :** Self-compacting concrete (SCC) developed in Japan in the late 80s has enabled the construction industry to reduce demand on the resources, improve the work condition and also reduce the impact of environment by elimination of the need for compaction. The shrinkage of concrete is the main cause of cracking in bridge decks. Bridge decks tend to be restrained from shrinkage, and this restraint along with other factors causes the bridge to crack. The characteristics of SCC under restrained shrinkage are important to understand in order to predict the cracking behavior in actual structures. Restrained shrinkage testing is done in accordance to AASHTO testing protocol. The free shrinkage performance and cracking behavior were reported and compared when changing the sand to aggregate ratio and the water to cement ratio. The results of free shrinkage show that when a mix design has higher free shrinkage, it will crack in restrained shrinkage earlier than a mix with lower free shrinkage.

**Keywords :** concrete mix, cracking behavior, restrained shrinkage, self compacting concrete

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