HIGH STRENGTH SELF-COMPACTED CONCRETE MIX DESIGN

SABIH Z. AL-SARRAF[1], MAY J. HAMOODI[2] & MOHAMMED A. IHSAN[3]

[1]Professor, Department of Building & Construction Engineering, University of Technology, Baghdad, Iraq

[2]Assistant Professor, Department of Building & Construction Engineering, University of Technology, Baghdad, Iraq

[3]Research Scholar, Department of Building & Construction Engineering, University of Technology, Baghdad, Iraq

ABSTRACT

High strength Self-compacted Concrete (HSSCC) is a highly flowable high strength concrete that can spread into place under its own weight and achieve good consolidation in the absence of vibration and without exhibiting defects due to segregation and bleeding. Development of HSSCC required a balance between the flowability and the stability of the concrete mix. While, achieving good consolidation in the absence of vibration and satisfying the requirement of high strength concrete is affected by the characteristics of materials and the mix proportions. Therefore, it becomes necessary to evolve a procedure for mix design of HSSCC. This paper describes a procedure specifically developed to achieve high strength self-compacting concrete. In addition, the test results for acceptance characteristics for self-compacting concrete such as slump flow, J-ring, V-funnel and L-Box are presented. Further, the strength characteristics in terms of compressive strength for 7-days, 28-days and 56-days are also presented.

KEYWORDS: High Strength Concrete (HSC), Self-Compacted (SCC), Flow Ability, Passing Ability