

**DEVELOPMENT AND STUDY OF BEHAVIOR OF SELF
COMPACTING CONCRETE USING GGBS**

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PROJECT REPORT

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Chapter 1

1.0 INTRODUCTION

The development of self compacting concrete (SCC) has been one of the most important material in the building industry. The purpose of this concrete concept is to decrease the risk due to human factor. The use of SCC is spreading worldwide because of its very attractive properties. SCC has properties that differ considerably from conventional slump concrete. SCC is highly workable concrete that can flow through densely reinforced and complex structural element under its own weight and adequately fill all voids without segregation, excessive bleeding, excessive air migration or other separation and materials and without the need of vibration or other mechanical consolidation.

The use of SCC is considered to have a number of advantages as:

- Faster placement
- Better consolidation around reinforcement.
- Easily placed in the walled element.
- Improves the quality, durability and reliability of the concrete structures.
- Reduces the total time of construction and the cost.

SCC will replace manual compaction of fresh concrete with a modern semi-automatic placing technology and in that way improves health and safety on and around the construction site. However, this type of concrete needs more advanced mix design than traditional vibrated concrete and more careful assurance with more testing and checking, at least in the beginning when using SCC. It is possible to improve the mechanical properties of concrete by using chemical, mineral additives. For instance, producing SCCs with the use of chemical additives, decreasing shrinkage and permeability and using mineral additives increased compressive strength. As it is well known, there are a wide range of cementitious mortars based on cement and components similar to those of concrete.