



## **Study on Strength and Behaviour of Self Compacting Concrete Incorporating Corrosion Inhibitor**

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**Abstract** :Self compacting concrete (SCC) never needs to vibration, for placing and consolidation of concrete. It can achieve complete compaction in formworks by its self weight, even in heavy reinforcement structures. Corrosion of steel reinforcement is the most important cause of premature failure on reinforced concrete. Prevention of corrosion is primarily achieved in the design phase by using high quality concrete and adequate cover. Additional anticipation techniques are adopted when severe environmental conditions occur or on structures requiring very long service life. In this work the effect of corrosion inhibitor deals with the strength properties of self compacting concrete with the addition of hexamine as organic corrosion inhibitor in concrete were studied. The inhibitor is added in different percentages of 0%, 1%, 2%, 3%, 4% and 5% by weight of cement. Mix design for M25 grade of concrete according to BIS method (IS 10262:2009).Then the standard concrete mix proportions were modified into SCC properties as per EFNARC specifications and different trail mixes were done. The feature of the fresh concrete (slump flow, V-funnel, L-Box, and J Ring) and hardened concrete and durability (Water absorption, and Sorptivity) is reviewed. From experimental results, it has been observed that addition of Hexamine as corrosion inhibitor (CI) increasing the compressive strength up to H2% at all ages i.e. 3, 7, 14, 28, 56 and 90 days, while an decreases trend is observed for addition of CI in H3%, H4% & H5%. After the strength tests were carried out and the results were compared with referenceself compacting concrete.

**Keywords:**Self-compacting concrete, Mix design, Hexamine (Corrosion inhibitor), Super plasticizer, fresh and hardened concrete properties, Durability studies.