

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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KARNATAKA



Project Report On

“STUDY OF SELF COMPACTING CONCRETE WITH PARTIAL REPLACEMENT OF COARSE AGGREGATES WITH RECYCLED CONCRETE AGGREGATES”

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SYNOPSIS

Self-compacting concrete (SCC) is an innovative concrete that does not require vibration for placing and compaction. It is able to flow under its own weight, completely filling formwork and achieving full compaction, even in the presence of congested reinforcement. The hardened concrete is dense, homogeneous and has the same engineering properties and durability as traditional vibrated concrete.

Due to industrialization there is huge amount of fly ash and concrete waste is created. This waste is used for dumping and for filling the low lying areas causing the environment deterioration in long run.

The project is undertaken to reduce the problem of environmental pollution, with reduction in cost of construction and at the same time not compromising on the durability and performance of the concrete.

The SCC mix is proposed to use cement, fine aggregate, coarse aggregate, admixtures like super plasticizers, viscosity modifying agents and recycled coarse aggregates. Materials are proposed to mix using

NANSU method of mix design for self compacting concrete with 0-30% (for every 5% increase) replacement of coarse aggregates with recycled concrete aggregates.

The properties of the fresh and the hardened concrete are tested, studied and evaluated by conducting the suitable experiments according to European and Japanese standard codes.

The SCC mix prepared with recycled concrete aggregates can be utilized for the laying of the concrete pavements and kerbs of highways, culverts, densely reinforced concrete structures and irrigation works.