ANN MODELLING FOR PREDICTION OF STRENGTH PARAMETERS OF STEEL FIBRE REINFORCED HIGH STRENGTH CONCRETE

A Project Report submitted in partial fulfillment of the requirements of Eight Semester Course in Degree of Bachelor of Engineering in Civil Engineering of Visvesvaraya Technological University, Belgaum.

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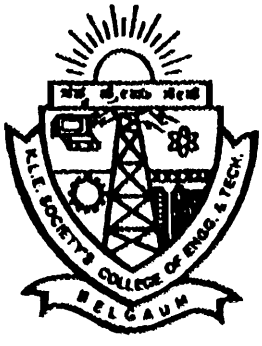

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ABSTRACT

The soft computing tools find scopes in various fields of engineering as they reduce human efforts and errors. The present study aims at the use of the Artificial Neural Network (ANN) to predict the strength parameters of High Strength steel Fiber Reinforced Concrete (HSFRC).

The M60 grade high strength steel fiber reinforced concrete specimens are cast with different percentage and lengths of steel fibers. These specimens are tested for different strength parameters such as compressive strength, split tensile strength and flexure strength. The test results are used to train the selected ANN model and also to validate the model.

The results of ANN are used to predict the strength parameters of M60 HSFRC for different proportions of fiber content. Based on the results, the optimum proportion fiber content to attain the required strength can be obtained. Further, the regression models are also developed for the estimation of strength parameters of HSFRC. The comparison of the results obtained by regression models with that of ANN results indicate the satisfactory performance of ANN model.