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*Shear behaviour of geo-polymer M-30 grade of concrete column by using ANSYS & MATLAB software*

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## **Abstract:**

The purpose of the project work is to study the shear behavior of a column made by reinforced cement concrete when they are subjected to uniaxial loading. The analysis of the reinforced cement concrete column is done by a Finite Element Software known as ANSYS. The prediction of the shear behavior is done through another software known as MATLAB by using artificial neural network. The inputs data for the software were collected from the experiments conducted on columns and the lateral ties are provided according to IS: 456-2000 at clause number 26.5.3.2(c) also the failure of columns longitudinal reinforcement by shear failure without yielding. As the studies are made limited on this shear behavior analysis we are affordable with limited number of literature. Analysis of shear behavior are depending upon wrong assumptions on model used for the analysis, and the results are very much conservative, and the empirical conservative rules are essential for the technical codes. In this research, the analysis is done through ANSYS software and the prediction is done through the ANN technique for the created model to get the results of shear strength of columns. The analysis is done for Geo-polymer concrete Column (GPC). The analysis of physical model and shear strength values are obtained very accurately with minimized errors. Finally, it shows the ANASYS software displaying the shear behavior results specifically.

## **Keywords:**

Geo-polymer, artificial neural network, MATLAB, Reinforcements, ANASYS software