

## **BEHAVIOUR OF REINFORCED CONCRETE COLUMN UNDER UNIAXIAL AND BIAXIAL LOADING –STATE OF THE ART**

**SHIVANI SRIDHAR & PAVITHRA L**

Department of Civil Engineering, Meenakshi Sundararajan Engineering College, Chennai, Tamil Nadu, India

### **ABSTRACT**

Columns are the vertical elements that majorly transmits the load and moments from superstructure to the substructure. Therefore, special attention should be given to their structural response under load reversals. Earthquake effects generally require the inclusion of biaxial loads that are recognized to be more damaging than the single direction loads. For framed structures, columns are responsible for overall strength and stability of the structure. Exterior column and corner columns of framed structures are subjected to varying axial load due to earthquake overturning moment in addition to bi-directional lateral load reversals. The collapse of a RC building is caused, in the majority of cases, by the failure of the vertical members. In this paper, the existing test on reinforced concrete (RC) columns under biaxial load has been reviewed, underlying their main findings. In general, the experimental results show that the RC columns response is highly dependent on the loading pattern, and the biaxial loading induces a decrease in the maximum strength and anticipates each damage state. Thus, in columns where demands are expected with large moments in both directions specific detailing should be provided in their critical regions in order to improve the columns performance and avoid premature failure. Our objective is to present the experimental results of the biaxial loaded column and to check the same with simulation work.

**KEYWORDS:** Columns, Load Reversals, Failure, Earthquake, Strength