

DYNAMIC ANALYSIS OF A G+3 BUILDING USING INDIAN STANDARD CODE METHOD AND TIME HISTORY METHOD

ANIBRATA PAL

Assistant Professor, GD-Rungta College of Engineering & Technology, Bilai, Chhattisgarh, India

ABSTRACT

Life of a huge number of individuals throughout the globe is at stake due to earthquakes. In history of civil engineering the structures were mainly designed by considering only static load factor. But in the field of civil engineering it is observed that the structures are not only depends upon static load as well as it depends upon seismic loads, wind loads, snow loads etc. depending upon the type of structure, dimension of the structures, location or zone of the structure, type of ground profile etc. Hence it is a process to analyse a structure for different types of loads and to design a structure for critical load case of which dynamic load is one of the most important load for the structure should be analysed and designed. In this paper there is an attempt has been made for dynamic analysis of a multi-storey (G+3) frame using Indian standard code method (Seismic co-efficient method), response spectrum method and time history analysis method. IS 1893:2002 (part-1) has been recommended for seismic co-efficient method and response spectrum method to calculate base shear and storey shear force for different zone (II, III, IV, V). for time history analysis, four earthquake data from previous earthquakes, like 1940 El-Centro, Kobe, Mexico City, and Bhuj. Study focuses to evaluate the base shear, storey shear forces of different floors at different zones and plot the time history curves of different earthquakes through time history analysis. Entire procedure was solved by using MAT-LAB programing. The BHUJ earthquake is originated from zone V so its displacement and base shear values from time history analysis are less than the Indian standard code method, which is safe.

KEYWORDS: Seismic Co-Efficient Method), Response Spectrum Method and Time History Analysis Me