

# TIME HISTORY RESPONSE PREDICTION FOR MULTI-STOREY BUILDINGS UNDER EARTHQUAKE GROUND MOTIONS

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## ABSTRACT

The earthquake code IS 1893(Part 1):2002 indicates that every structure shall be designed to seismic forces, because whole part of the country is under the seismic influence.

The seismic resistance design codes recommend the selection of at least three or seven ground motion records, for the time-history analysis purposes, which shall be compatible to the design spectrum. On the other hand, the spectrum compatible records may change the structural response because of the different characteristics in comparison with real ground motion records. Spectrum compatibility is done for real accelerograms to generate compatible accelerograms. The spectrum compatibility is done by using a programme WAVEGEN, by using these records response spectrums are generated using SEISMO-SIGNAL software. These response spectrums are compared with IS 1893(Part1)-2002 response spectrum. The time-history analysis is carried out by using the compatible accelerograms. The response spectrum analysis and time-history analysis is done by using ETABS, and results obtained from analysis are verified. Nonlinear time history analysis is done for studying the inelastic behaviour of the structures.

**KEY WORDS:** Time History, Spectrum compatible, Accelerograms, Response spectrum, Ground motion.