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Effect of Backstay in Design of Tall Structure as Per IS 16700:2017

Hardik B. Rangani[1] and V. R. Patel[2]
Post Graduate Student, Applied Mechanics Department[1]
Professor, Applied Mechanics Department[2]
The Maharaja Sayajirao University of Baroda, Gujarat, India

Abstract: *Seismic analysis of structural systems with floor diaphragms has been a requisite in the recent past. The duty of a structural engineer is to be prudent about the behaviour of every structural system adopted. Amongst the structural systems that areadopted world over, diaphragm with rigid and semi-rigid floor plate are adopted widely in the analysis. This research focuses onthe backstay effect i.e. podium structural interaction with the tower area and consideration of retaining wall as increment of lateral stiffness as specified in latest tall building code IS6700:2016 for low and high rise structures. In the current studymodels were prepared with low to high rise storeys with rigid and semi rigid diaphragms considering backstay diaphragm placing tower at centre and corner. The models were subjected to seismic forces; response spectrum along with the combination of thegravity loads. The structural responses like natural periods, base shear, displacement and inter storey drift were also studied.*

Keywords: Podium tower, Backstay effects, rigid andSemi-rigid diaphragm. Seismic Analysis

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