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ABSTRACT

Due to rapid urbanization, many tall buildings are coming up not only in metros (tier 1) but also in tier 2 and 3 cities. On the other hand, it's clearly known that large part of the country i.e. around 56% are of India's land mass is prone to moderate to severe earthquake events. Also it's clearly evident from past earthquakes such as Bhuj 2001, many multistory buildings over 200 km away from the epicenter i.e. in Ahmedabad suffered severely. Design of high-rise buildings is not same as the design of low-rise and mid-rise buildings. Bureau of Indian standards has come up with special code IS 16700 which gives provisions for designs of Tall buildings. To understand and implement the provision of this code sufficient experience and expertise is required. In this paper one such provision, about torsion irregularity stipulates that the first two modes of vibration should be translation modes and the torsion mode cannot be earlier than the third mode of vibration, is discussed. Observation on how buildings with different aspect ratios result in giving radically different first natural periods is outlined.

Keywords: Tall buildings, aspect ratio, time period, torsion;
