

عنوان مقاله:

VIBRATION PROPERTIES OF REINFORCED CONCRETE BUILDINGS DETERMINED FROM AMBIENT
VIBRATION TESTS

محل انتشار:

چهارمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1382)

تعداد صفحات اصل مقاله: 8

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خلاصه مقاله:

The preliminary results of an on going research project with the aim of determining the apparent periods of engineered buildings in Iran, are presented here. The ambient vibration test records from 25 reinforced concrete buildings, located mainly in Tabriz, were used to extract the apparent natural periods. The surveyed buildings had heights up to 75 m. All of the buildings used in this research have been designed based on the Iranian Seismic Code of Practice (Standard 2800). The results were used to assess the credibility of suggested formulas by Code 2800 for buildings in Iran, which are different in some aspects from those that were main source for adopting these formulas. It was found that the apparent periods extracted from low-amplitude ambient vibrations are shorter than those obtained from suggested formula by Iranian current seismic code in which the natural period is only related to the height of the building. The formula specified in the previous version of the code which also incorporated building dimension as well as height, seems to give better results. The parameter H/D was examined and found to be appropriate for estimating the value of apparent period. The ratio of first to second mode period was extracted and was found to lie between 3 and 4 for RC buildings with dual lateral-force resisting systems. The ratio gains values less than 3 in several MRF cases. In most of the cases where torsional periods were identified, they were found to be shorter than that of translational modes

کلمات کلیدی:

natural period, ambient vibration test, concrete buildings, Code 2800, period formulas

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