

Comparison of Seismic Retrofitting Methods for Existing Foundations in Seismological Active Regions

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Abstract : Seismic retrofitting of important structures is essential in seismological active zones. The importance is doubled when it comes to some buildings like schools, hospitals, bridges etc. because they are required to continue their serviceability even after a major earthquake. Generally, seismic retrofitting codes have paid little attention to retrofitting of foundations due to its construction complexity. In this paper different methods for seismic retrofitting of tall buildings' foundations will be discussed and evaluated. Foundations are considered in three different categories. First, foundations those are in danger of liquefaction of their underlying soil. Second, foundations located on slopes in seismological active regions. Third, foundations designed according to former design codes and may show structural defects under earthquake loads. After describing different methods used in different countries for retrofitting of the existing foundations in seismological active regions, comprehensive comparison between these methods with regard to the above mentioned categories is carried out. This paper gives some guidelines to choose the best method for seismic retrofitting of tall buildings' foundations in retrofitting projects.

Keywords : existing foundation, landslide, liquefaction, seismic retrofitting

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