

عنوان مقاله:

Seismic Performance of Reinforced Concrete Water Tanks with Shaft Staging During the Past Earthquakes

محل انتشار:

سومین کنفرانس بین المللی مقاوم سازی لرزه ای (سال: 1389)

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خلاصه مقاله:

The existing designs of supporting structures of elevated water tanks are severely vulnerable under lateral forces and the past earthquakes provided illustrations when a great number of water tanks with shaft staging suffered damage and a few of them collapsed. Liquid storage tanks and chiefly elevated reservoirs comprise structures with very high circumference and elements of the main arteries are considered. Hollow spherical shaft is the most popular type of staging to support a tank container. In the past earthquakes it has been identified that the reinforced concrete water tanks under lateral earthquake loads have been extremely vulnerable, so that in some cases, these tanks had suffered collapse. This paper presents the occurred damages in water tanks with shaft staging during the past earthquakes. The reasons for these damages occur studied, then so provide patterns for these damages in structures. Failure modes of reinforced concrete water tanks with shaft staging are divided into Bending-tension failure mode, Bending-Torsion failure mode or Bending-Shear failure mode, Bending-Axial failure mode and Bending-compression failure mode. Considering the fact that damage pattern recognition is necessary to the appropriate analyze in reservoirs in the methods of nonlinear and dynamic, so the main objective of this paper is to obtain the damage pattern in water tanks with shaft staging for using in analytical methods

کلمات کلیدی:

Elevated Water Tanks, Damage, Shaft Staging, Reinforced Concrete

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