

## عنوان مقاله:

Some Contribution to Rational Design of Piled Raft Foundation for Oil Storage Tanks on Non-Liquefiable Ground:  
Application of Dynamic Centrifuge Modeling

## محل انتشار:

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## خلاصه مقاله:

Some level of settlement is allowed in the design of oil tanks if uneven settlement is controlled within allowable values. Considering the critical condition of Piled Raft Foundation (PRF), that is, secure contact of raft base to the ground surface, PRF is considered as one of the rational foundations for the oil tanks. However, PRF has a complicated interaction with soil under horizontal seismic loading. Regarding this complexity, the main concern in use of PRF for oil tanks is proper design of this foundation system. In this study, a series of centrifuge tests were performed to investigate the mechanical behavior of oil tanks supported by PRF on non-liquefiable sand. Using the observed results, such as accelerations of the tank and ground and displacements of the foundation, some practical hints for reasonable design of piled raft foundation for oil tanks on non-liquefiable sand are discussed. According to the results of this study, the main concern in the rational design of the foundation is piles' design and their punching effect on the raft, in case of PRF of oil tank on non-liquefiable sand.

## کلمات کلیدی:

Oil storage tank, Design of piled raft foundation, Centrifuge Modeling

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