SEISMIC LOADS ON LIQUID STORAGE TANKS
ACCORDING TO ECP-201

By

Mohammed Gamal Gouda Hassan

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
STRUCTURAL ENGINEERING

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Title of Thesis:
Seismic Loads on Liquid Storage Tanks According to ECP-201

Key Words:
Seismic loads; Liquid storage tanks; Maximum hydrodynamic pressure; Maximum sloshing wave height.

Summary:
This study investigates the seismic response of RC ground supported rectangular liquid storage tanks. It evaluates the effect of ground motion characteristics (in terms of its response spectrum) on the base shear V, base overturning moment M, hydrodynamic pressure $P_{max}$, and maximum sloshing wave height $d_{max}$. Besides, the effect of subsoil properties and the effect of tank width B (perpendicular to the direction of seismic force) are also discussed. A MATLAB program is developed to help in calculating the seismic loads on liquid storage tanks.
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