

Seismic Behavior of a Jumbo Container Crane in the Low Seismicity Zone Using Time-History Analyses

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Abstract : Jumbo container crane is an important part of port structures that needs to be designed properly, even when the port locates in low seismicity zone such as in Korea. In this paper, 30 artificial ground motions derived from the elastic response spectra of Korean Building Code (2005) are used for time history analysis. It is found that the uplift might not occur in this analysis when the crane locates in the low seismic zone. Therefore, a selection of a pinned or a gap element for base supporting has not much effect on the determination of the total base shear. The relationships between the total base shear and peak ground acceleration (PGA) and the relationships between the portal drift and the PGA are proposed in this study.

Keywords : jumbo container crane, portal drift, time history analysis, total base shear

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