

On the Performance of a Multi Story Irregular Apartment Building Model Under Seismic Load in Indonesian Moderately High Seismicity Region

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Abstract	<p>Purbalingga is regency with a potential moderately high seismicity requiring compliance of planning and implementation rules of the earthquake-resistant structural system. The purpose of this research is to evaluate the performance of a ten-story irregular apartment building model in Purbalingga due to the seismic load. The study is necessarily conducted to provide information on impacts and mitigation strategies that should be implemented. This research was conducted based on the seismic capacity of 2002 and 2012 Indonesian National Standard (SNI) including linear static analysis, dynamic response analysis, and pushover analysis. Based on the direct static review, it shows that the base shear is reduced and the drift ratio level decreases respectively for X and Y direction. Meanwhile, based on the dynamic response analysis, the drift ratio level also decreases respectively for X and Y direction. Also, the pushover analysis indicates that the performance of this apartment building model is still at Immediate Occupancy (IO) level as the post-earthquake damage state that remains safe to occupy, essentially retains the pre-earthquake design strength and stiffness of the structure. The risk of life-threatening injury as a result of structural damage is very low, and although some minor structural repairs may be appropriate, these would generally not be required before occupancy</p>
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