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Modeling of Single Bay Precast Residential House Using Ruaumoko 2D Program

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Abstract : Precast residential houses are normally constructed in Malaysia using precast shear-key wall panel and precast wall panel are designed using BS8110 where there is no provision for earthquake. However, the safety of this house under moderate and strong earthquake is still questionable. Consequently, the full-scale of residential house are designed, constructed, tested and analyzed under in-plane lateral cyclic loading. Hysteresis loops are plotted based on the experimental work and compared with modeling of hysteresis loops using HYSTERES in RUAUMOKO 2D program. Modified Takeda hysteresis model is chosen to behave a similar pattern with experimental work. This program will display the earthquake excitations, spectral displacements, pseudo spectral acceleration, and deformation shape of the structure. It can be concluded that this building is suffering severe cracks and damage under moderate and severe earthquake.

Keywords : precast shear-key, hysteresis loops, spectral displacements, deformation shape
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