Perkiraan kehancuran bangunan rumah toko di kota Medan akibat skenario terburuk gempa subduksi Nias

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Abstrak

In Medan, the shop-house (ruko) buildings are generally not engineered-designed property and constructed in bad supervision; hence it has big risk to dynamic loads like earthquake. The low frequency and long duration of earthquake vibrations were felt frequently in Medan due to earthquakes in Sumatra subduction zones. Moreover, some houses and hotels have been cracked caused the tremor from Nias earthquake in 2005. Therefore, a number of samples of fresh concrete, either ready-mix or mixed manually, and the stick of steel reinforcement are taken from ruko construction site and tested in the tab. The results of the material compression and tensile testing are used as material properties of ruko model. The ruko model consists of 2, 3, and 4 stories and l, 2, and 3 bays. The inelastic analysis of reinforced concrete structures are then applied by using IDARC2D program and employed synthetic ground motion forces from Nias subduction earthquake scenarios. The result shows that mast of ruko buildings experiencing cracks extensively even some of them show a high damage level with very low performance and beyond repair.