

Simple Earthquake Resistant House Type 36 Design in Banten Province Based on SNI 1726:2012 and SNI 2847:2013

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ABSTRACT

Earthquake of 6,1 Richter Scale located in Lebak Regency, Banten Province at Epicentrum of 7,23 LS-105,9 BT had a lot of losses. Accordin to BNPB, 2018, the earthquake cause damage to 1130 units house. Damaged with categories badly damaged, medium damaged, and lightly damaged.

This research was to design earthquake resistance simple house and conducted displacement to determine as the behavior of building structures. It had Analyzed by dynamic quake analysis in Banten area. The calculation using SNI 1727 – “Tata Cara Perencanaan Ketahanan Gempa untuk Struktur Bangunan Gedung dan Non-Gedung” as the regulation and software analysis by ETABS.

The result of this study show the displacement that have already multiplied by enlargement factor to single house for X and Y axis is 26,266 mm and 24,498 mm , for couple house is 29,363 mm and 32,112 mm. The house was built with provisions, C75.100 coldrolled roof truss, 3 SDS screws for connection ($d_f = 4,8$ mm), 130x200 mm beam ($\rho = 0,0229$), 130x200 mm sloof, 130x130 mm column ($\rho = 0,0218$) and 130x200 column ($\rho = 0,018$), 30x30x60 rubble stone footing. Anchor is needed to tie beam with truss, column and wall, and sloof with foundation. Budget plan for single house is Rp. 99.000.000,- (Sembilan puluh Sembilan juta rupiah) and the couple is Rp. 197.000.000,- (seratus sembilan puluh tujuh juta rupiah).

Keywords: *Earthquake resistant house, Earthquake, Displacement, Budget Plan*