

ABSTRAK

Dana Mareta, 2017, Study *Penempatan Shearwall* untuk struktur Beton Tahan Gempa Gedung Pasca Sarjana Hukum Universitas Jember.

Peningkatan jumlah mahasiswa pertahun cukup tinggi dan kebutuhan sarana prasarana untuk terpenuhi. Universitas Jember termasuk kampus yang mahasiswanya cukup banyak. Kondisi ini mengharuskan pola pembangunan suatu struktur secara vertical (bertingkat).struktur bangunan bertingkat rentan menerima gaya – gaya lateral yang menyebabkan timbulnya simpangan horizontal.

Metode penelitian berupa analisis struktur beton tahan gempa 5 lantai dengan ukuran 27.9 m x 42 m dengan dinding geser yang direncanakan sebagai perkantoran. Perhitungan analisis struktur menggunakan perangkat lunak ETABS v.9.0. Hasil analisis tersebut digunakan untuk mengontrol kinerja batas layan dan struktur.

Hasil analisis study 1 dengan tebal shearwall 400 mm didapatkan besarnya simpangan dari arah x lantai 1 ($\Delta S = 0.0367$ mm), lantai 2 ($\Delta S = 0.0649$ mm), lantai 3 ($\Delta S = 0.0783$ mm), lantai 4 ($\Delta S = 0.0819$ mm), lantai 5 ($\Delta S = 0.0522$ mm), sedangkan dari arah y lantai 1 ($\Delta S = 0.0934$ mm), lantai 2 ($\Delta S = 0.283$ mm), lantai 3 ($\Delta S = 0.238$ mm), lantai 4 ($\Delta S = 0.256$ mm), lantai 5 ($\Delta S = 0.1725$), jadi semakin kecil lendutan maka semakin kecil simpangan yang terjadi. Pemasangan dinding geser pada struktur dapat mengurangi secara signifikan simpangan yang terjadi. Hal ini berarti dinding geser dapat meningkatkan kekakuan,kekuatan, dan kestabilan pada struktur.

Kata kunci simpangan horizontal, dinding geser

ABSTRACT

Dana Mareta, 2017, Shearwall Placement Study for Earthquake Resistant Concrete Structure Building Post-Graduate Law University of Jember.

The increasing number of students per year is quite high and the infrastructure needs to be met. University of Jember including campus which students are quite a lot. This condition necessitates the pattern of building a structure vertically (multilevel). Vulnerable building structures are susceptible to the lateral forces that cause horizontal deviations.

The method of research is the analysis of 5 floor earthquake-resistant concrete structure with the size of 27.9 m x 42 m with shearwall that planned as an office. Calculation of structural analysis using ETABS software v.9.7.2. The results of this analysis are used to control the performance of service and structure limits.

The result of analysis of study 1 with 400 mm shearwall thickness was obtained by deviation from the direction of x floor 1 ($\Delta S = 0.0367$ mm), floor 2 ($\Delta S = 0.0649$ mm), floor 3 ($\Delta S = 0.0783$ mm), 4th floor ($\Delta S = 0.0819$ mm), floor 5 ($\Delta S = 0.0522$ mm), while from the 1st floor ($\Delta S = 0.0934$ mm), 2nd floor ($\Delta S = 0.283$ mm), 3rd floor ($\Delta S = 0.238$ mm), floor 4 ($\Delta S = 0.256$ mm), 5th floor ($\Delta S = 0.1725$), so the smaller the deflection the smaller the deviation occurs. Installation of the sliding wall in the structure can significantly reduce the deviations that occur. This means that the shear wall can increase the stiffness, strength, and stability of the structure.

Keywords : drift, shearwall