

PERENCANAAN STRUKTUR GEDUNG WISMA ATLET DI KABUPATEN TASIKMALAYA

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ABSTRAK

Perencanaan gedung bertingkat dengan struktur beton ini dibutuhkan perhitungan yang tepat dan teliti. Perencanaan bangunan komersial seperti wisma perlu memperhatikan dua aspek utama, yaitu efisiensi dan kenyamanan. Dua aspek ini mempengaruhi keputusan perancangan wisma dengan melihat keperluan konsumen. Struktur gedung wisma direncanakan menggunakan sistem struktur rangka gedung dengan dinding struktural khusus yang mengacu pada SNI 2847-2013 dan SNI 1726-2012.

Pemodelan dan analisa struktur menggunakan perangkat lunak *Extended Three Dimensional Of Building System (ETABS)* 2013 dan beberapa perangkat lunak pendukung seperti sap2000 v.14 dan AutoCad 2007. Beban yang dianalisis meliputi beban mati, beban hidup, beban angin, dan beban gempa dinamis analisa respons spektrum. Elemen - elemen struktur yang dianalisa dan direncanakan meliputi pelat atap, pelat lantai, balok, kolom, corewall dan pondasi bored pile. Hasil analisa dan perencanaan struktur gedung wisma didapatkan tebal pelat atap 100 mm dengan tulangan tumpuan dan lapangan D10-150, tebal pelat lantai 110 mm dengan tulangan tumpuan dan lapangan D10-166,67, balok induk BI-1 400 mm x 600 mm dengan tulangan pokok tumpuan dan lapangan 6 ϕ 16 dan tulangan sengkang tumpuan ϕ 10-150 dan tulangan sengkang lapangan ϕ 10-200, kolom K3 tengah 450 mm x 650 mm dengan tulangan pokok 14 ϕ 22 dan tulangan sengkang ϕ 13-130 untuk daerah selain l_o dan ϕ 13-110 untuk daerah l_o , corewall tebal 350 mm dengan tulangan pokok ϕ 16-200 dengan tulangan sengkang 2 ϕ 16-100, pondasi bore pile dibawah kolom diameter 500 mm kedalaman 8000 mm dengan tulangan pokok 10 D16 dan pondasi bore pile dibawah corewall diameter 500 mm kedalaman 10000 mm dengan tulangan pokok 8 D16.

Kata kunci : Balok, Corewall, Kolom, Pelat, Pondasi, Struktur

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DESIGN OF WISMA ATLET BUILDING STRUCTURE IN TASIKMALAYA DISTRICT

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ABSTRACT

Planning high-rise buildings with concrete structures requires precise and careful calculations. Commercial building planning such as a guesthouse needs to pay attention to two main aspects, namely efficiency and comfort. These two aspects influence the design decisions of the guesthouse by looking at consumer needs. The structure of the guesthouse building is planned to use a system of building frame structures with special structural walls that refer to SNI 2847-2013 and SNI 1726-2012.

Structural modeling and analysis using the 2013 Extended Three Dimensional Of Building System (ETABS) software and some supporting software such as sap2000 v.14 and AutoCad 2007. The analyzed loads include dead load, live load, wind load, and dynamic earthquake load response analysis spectrum. Structural elements that are analyzed and planned include the roof plate, floor plate, beam, column, corewall and bored pile foundation. The results of the analysis and planning of the structure of the guesthouse building obtained a thickness of 100 mm roof plate with reinforcement pitch and field D10-150, 110 mm floor plate thickness with support reinforcement and field D10-166.67, BI-1 beam beam 400 mm x 600 mm with reinforcement pedestal base and field 6 ϕ 16 and pedestal reinforcement ϕ 10-150 and field stirrer reinforcement ϕ 10-200, middle K3 column 450 mm x 650 mm with principal reinforcement 14 ϕ 22 and stirrup reinforcement ϕ 13-130 for areas other than lo and ϕ 13-110 for l_o area, 350 mm thick corewall with base reinforcement ϕ 16-200 with stirrup reinforcement 2 ϕ 16-100, bore pile foundation under 500 mm diameter column depth 8000 mm with 10D16 base reinforcement and bore pile foundation under corewall diameter 500 mm depth 10000 mm with principal reinforcement 8D16.

Keywords : Structure, Plates, Beams, Column, Corewall, Foundation

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