REDESAIN STRUKTUR GEDUNG MALL PELAYANAN PUBLIK SLEMAN MENGGUNAKAN METODE FLAT SLAB WITH DROP PANEL DAN SHEAR WALL

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ABSTRAK

Penggunaan metode *flat slab* dalam perancangan struktur bangunan gedung bertingkat di Indonesia masih jarang digunakan saat ini. *Flat Slab* merupakan konstruksi beton pelat dua arah dengan ciri tidak adanya balok pada metode ini. Dengan tidak menggunakan balok keuntungan yang dapat diperoleh adalah mengurangi volume beton, mengurangi ketinggian perlantai, mengurangi beban struktur. Dalam penelitian ini akan dibuat redesain struktur gedung Mall Pelayanan Publik Sleman. Tujuan penelitian ini adalah untuk mengetahui dimensi struktur pelat, kolom, *drop panel*, dan *shear wall* serta penulangan pada Gedung Mall Pelayanan Publik Sleman. Metode penelitian ini ialah mendesain ulang dengan metode *flat slab with drop panel* dan penambahan *shear wall* berdasarkan perhitungan SNI 1727-2020, SNI 2847-2019, SNI 1726-2019. Untuk pemodelan struktur digunakan bantuan *software* ETABS 2018. Hasil analisis dan perhitungan dimensi struktur menggunakan metode *flat slab* didapatkan tebal pelat lantai 230 mm, tebal pelat atap 200 mm, tebal *drop panel* 250 mm dengan lebar *drop panel* 2800 mm arah x dan 2800 untuk arah y, menggunakan dimensi kolom 1 yaitu 700 mm x 700 mm dan dimensi kolom 2 yaitu 1000 x 1000 mm serta ketebalan *shear wall* 250 mm. Hasil analisis menggunakan *software* ETABS 2018 didapatkan periode gedung (T) sebesar 0,548 detik.

Kata kunci: *Flat Slab*, Balok, *Drop Panel, Shear Wall*

REDESIGN OF PELAYANAN PUBLIK MALL STRUCTURE IN SLEMAN USING THE FLAT SLAB WITH DROP PANEL AND SHEAR WALL METHOD

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ABSTRACT

The use of the flat slab method in the design of high-rise building structures in Indonesia is still rarely used today. Flat Slab is a two-way slab concrete construction characterized by the absence of beams in this method. By not using beams, the benefits that can be obtained are reducing the volume of concrete, reducing the height of the floor, and reducing the load on the structure. In this research, a structural redesign of Pelayanan Publik Mall building will be made. The purpose of this study was to determine the dimensions of the plate, column, drop panel, and shear wall structures as well as the reinforcement in the building. The method of this research is to redesign using the flat slab with drop panel method and the addition of shear walls based on the calculations of SNI 1727-2020, SNI 2847-2019, SNI 1726-2019. For structural modeling, the help of ETABS 2018 software was used. The results of the analysis and calculation of structural dimensions using the flat slab method obtained a floor plate thickness of 230 mm, a roof plate thickness of 200 mm, a drop panel thickness of 250 mm with a drop panel width of 2800 mm in the x direction and 2800 for the y direction. , using column 1 dimensions of 700 mm x 700 mm and column 2 dimensions of 1000 x 1000 mm and a shear wall thickness of 250 mm. The results of the analysis using the 2018 ETABS software obtained the building period (T) of 0.548 seconds.

Keywords: Flat Slab, Beams, Drop Panel, Shear Wall