ABSTRAK

Perencanaan pelat beton bertulang harus memperhatikan dua kategori desain, yakni kekuatan dan kelayanan, serta memastikan ketebalan pelat minimum untuk menekan efek penyusutan dan deformasi material. Menghitung deformasi lendutan material jangka pendek, harus lebih kecil dari lendutan yang diijinkan oleh peraturan beton. Penelitian ini dilakukan dengan cara menyederhanakan desain kategori kelayanan agar tebal plat beton memenuhi standar SNI 03-2847 2019, juga dari segi kekuatan agar men-dapatkan luas tulangan yang optimal dari bangunan Rumah Susun Yayasan Ponpes Nurul Chotib Al Qodiri Tipe Rembunai 2 Lantai. Analisa tebal pelat ukuran 130 mm pada bangunan dilakukan dan menunjukkan bahwa tebal tersebut belum memenuhi syarat lendutan sesuai perhitungan, apabila nilai α_m terletak melebihi 0,2. Oleh kare-nanya dilakukan cek lendutan izin sesaat yang menghasilkan nilai 0,63 mm dimana lebih kecil dari perhitungan lendutan yang diijinkan akibat beban mati dan hidup yakni 16,67 mm. Sehingga perlu di uji studi kembali dengan menggunakan tebal plat 95 mm yang menghasilkan nilai lendutan sebesar 6,31 mm dimana mendekati lendutan ijin.

Kata kunci : Lendutan, Tulangan Minimum, dan Minimum Pelat.

ABSTRACT

The planning of reinforced concrete slabs must consider two design categories, namely strength and serviceability, and ensure the minimum slab thickness to suppress the effects of material shrinkage and deformation. Calculating the short-term deflection deformation of the material, it should be smaller than the deflection allowed by the concrete regulations. This research was conducted by simplifying the design of the service category so that the thickness of the concrete slab meets the SNI 03-2847 2019 standards, as well as in terms of strength in order to obtain the optimal reinforcement area of the 2-Storey Ponpes Nurul Chotib Al Qodiri Foundation Flat House building. Analysis of the 130 mm thick plate in the building was carried out and showed that the thickness has not met the deflection requirements according to the calculation, if the αm value is located exceeding 0.2. Therefore, the instantaneous allowable deflection was checked which resulted in a value of 0.63 mm which is smaller than the calculation of the allowable deflection due to dead and live loads which is 16.67 mm. So it is necessary to test the study again using a plate thickness of 95 mm which produces a deflection value of 6.31 mm which is close to the allowable deflection.

Keywords: *Deflection, Minimum Reinforcement, and Plate Minimum.*