

ABSTRACT

Comparative Study of Plate Structure Reinforced Concrete Between Conventional Method and Prestressed Post-tension Method

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This study aim to do a planning comparison of design plate reinforced concrete conventional method with prestressed post-tension method. The case study used plate structure concrete of building A Pembangunan Jaya University project with floor plan 3 with an area of 23 m x 30 m. The plan that has been designed using the conventional concrete method will be charged to plan the post-tension prestressed method plate design by removing the beam so that the span is larger and the plate thickness is charged to 150 mm for the minimum requirements. Planning design of plate prestressed post-tension method is carried out by load balancing. The result of design plate with area plate type section 9 m x 7,5 m used prestressed method be required 7 wire strands tensile strength 1860 MPa with space 350 mm (for long span) and 200 mm (for short span). The result of prestressed method requires construction cost is Rp 968,636,519 (10% more efficient than conventional method) on construction steel work, formwork and concrete for bearer beam and slab.

Keywords: slab, conventional concrete, prestressed concrete

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