

THE EFFECT OF ADDITIONAL DRILLING SCREW BOLT AS A PROVIDER OF SHEARING ON CONCRETE BEAM USING MILD STEEL AS TENSILE REINFORCEMENT

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Abstract

This study aims to find out how much the increase in bending load capacity occurs in beams added with shear providers by using bolts as flexural reinforcement and also to determine the increase in bending load capacity of beams from experimental results compared to theoretical results and to find out the cracks that occur based on the type of failure. on the beam. The flexural test is carried out by applying a one-point load at the center of the span of the beam with a spacing of 1.1 m between the supports. The beam test specimens were made with a size of 0.15 x 0.25 x 1.3 m and mild steel plate models were made with a size of 2 x 50 x 0.7 mm in the tensile section of the beam and the number of shear providers in the form of bolts was used as many as 16 pieces. From the experimental results, the maximum load value for the flexural strength of the control beam is PBKL 24.73 kN with a deflection of 12.82 mm and for beams with the addition of shear providers in the form of bolts, the PBB is 42.93 kN with a deflection of 5.2 mm. This shows that the addition of bolts as shear providers can increase the bending capacity of 73.59. When compared with the theoretical increase, this increased by 92.17%.

Keywords: *Flexural Testing, Mild Steel, Shear/Bolt Provider, Reinforced Concrete Beams.*