EXPERIMENTAL STUDY ON COMPOSITE BEAM IN COLD FORMED STEEL STRUCTURES

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ABSTRACT: Composite beam is composed of two or more dissimilar material join together to act as unit. Cold formed steel sheet are widely used in composite construction. In is paper an experimental study has been conducted with three different cold formed sheet of profile viz., Rectangular, Dowel tailed and Trapezoidal profile. The composite beam is of size 1.2 x 0.340 x 0.1m. The grade of the material used for the experimental work is M25 and Fe275. The coupon test has been conducted to determine the mechanical properties of steel sheet. The beams have been tested under four point loading. The experiment is done under static loading conditions. The optimum load carrying capacity of the beam, maximum deflection and type of failure is determined. The position of propagation of cracks is also studied. Comparative analysis has been made with three different profiles based on the type of failure and the energy stored in the member is also analyzed using Origin software.

Keywords: Composite Beam, Cold Formed Steel, Deflection