World Academy of Science, Engineering and Technology
International Journal of Materials and Metallurgical Engineering
Vol:11, No:02, 2017

Flexural Behavior for Prefabricated Angle Truss Composite Beams Using Precast Concrete

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Abstract : Prefabricated angle truss composited beam is a kind of concrete encased composite beam. It is prefabricated at factory as Pratt truss with steel members. Double angle is used for top, bottom chords and vertical web member. Moreover, diagonal web member is steel plate. Its sectional shape looks like I-shape. This beam system has two stages. The first is construction stage in which the beam is directly connected to the column for resist construction load. This stage beam consists of Pratt truss and precast concrete. The stability of the beam is verified. The second is service stage. After the connection, cast-in-place concrete is used for composite action. Ultimate flexural capacity is verified and show advantage than RC and steel. In this paper, the beam flexural capacity is verified in both stages. And examined the flexural behavior of the beam.

Keywords : composite beam, prefabrication, angle, precast concrete, pratt truss
Conference Title : ICAEMCM 2017 : International Conference on Architecture Engineering and Modern Construction Materials
Conference Location : Bangkok, Thailand
Conference Dates : February 07-08, 2017