



ChemTech

International Journal of ChemTech Research

CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.10 No.14, pp 49-57, 2017

Experimental Study on RC Beam Externally Bonded with Electrogalvanized Steel Plate Using Epoxy

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Abstract : Reinforced concrete (RC) is a composite material in which concrete's low tensile strength and ductility are neutralised by the inclusion of reinforcement having higher tensile strength or ductility. Plate bonding technique has gained widespread acceptance as a potential solution. The plated beams show considerable enhancement in flexural strength. An experimental study on RC beam externally bonded with electrogalvanized steel plate is carried out. The present study describes the result of testing RC beam externally bonded with electrogalvanized steel plates using epoxy by varying the thickness of steel plates. Steel plates are bonded to the tension side and side faces of reinforced concrete structure, thus supplying additional longitudinal reinforcement and shear reinforcement respectively, hence the flexural capacity shear capacity increases. This project deals with experimental and comparative study of flexural behaviour of reinforced concrete beam bonded with galvanized steel plate with control beam and to study its failure pattern by placing the plate in the bottom and side faces of the beam using suitable bonding agent such as epoxy.

Keywords : External bonding, electrogalvanized steel plate, flexural behaviour of concrete.

M.Sivaranjani *et al* /International Journal of ChemTech Research, 2017,10(14): 49-57.
