

PULTRUDED FRP PLANKS AS STAY-IN-PLACE FORMWORK FOR CONCRETE STRUCTURES

ReemaGoyal^a(reemagoyal22@gmail.com), ShwetaGoyal^{a*}(shweta@thapar.edu), Abhijit
Mukherjee^babhijit.mukherjee@curtin.edu.au

^aDepartment of Civil Engineering, Thapar University, Patiala 147001 , India

^bDepartment of Civil Engineering, Curtin University, Perth, WA 6102, Australia

*Corresponding author, Tel: +91 9781715332, Email:shweta@thapar.edu

Abstract

A feasibility study in which a pultruded Fiber reinforce polymer (FRP) plank was used as stay-in-place (SIP) form serving as formwork during wet stage and as reinforcement during hardened stage is presented in this paper. Firstly, the strength and stiffness of FRP plank serving as formworks for concrete casting under construction stage was verified by sand filling test. Then shear tests were carried out to develop proper bond technique between FRP and concrete so that they can perform as composite structural member. Thirdly, static tests on beams were conducted to evaluate the load-carrying capacity and failure modes of proposed hybrid beam. The overall investigations showed the feasibility of using FRP plank as SIP formwork

Keywords- FRP, stay-in-place formwork, reinforcement, adhesive bonding, aggregate bonding