VISVESVARAYA TECHNOLOGICAL UNIVERSITY

'Jnana Sangama' Belagavi - 590 014

PROJECT REPORT

On

"STRENGTHENING OF RCC BEAM USING FRP SHEET"

Submitted in partial fulfillment of the requirement for the award of

BACHELOR OF ENGINEERING

In

CIVIL ENGINEERING

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ABSTRACT

Worldwide, a great deal of research is currently being conducted concerning the use of fiber reinforced polymer wraps, laminates and sheets in the repair and strengthening of reinforced concrete members. In recent decades, Fiber Reinforced polymer (FRP) material has increased its importance in the construction industry. FRP is a non-metallic reinforcement material which has been used in the strengthening of structures especially concrete structures. FRP materials are lightweight, high strength-to-weight ratio, stiffness-to-weight ratio has high chemical resistance, ease to install, minimum labor cost and non-corrosive, these characteristics make FRP superior to traditional structural retrofit materials such as steel plates.

FRP repair systems provide an economically viable alternative to traditional repair systems and materials. Experimental data on load, deflection and failure modes of each of the beams were obtained. The detail procedure and application of FRP sheets for strengthening of RC beams is also included. The effect of number of FRP layers and its orientation on ultimate load carrying capacity and failure mode of the beams are investigated.