

THESIS ABSTRACT

The study identified in certain instances the effectiveness of the external post-tensioning in rehabilitating damaged structural beams.

The study was focused on type of techniques employed externally, the various reasons, the problems encountered, the effectiveness in terms of strength, design, cost, time utilization, and the alternatives procedures and preventive measures to improve application of external post-tensioning techniques.

The comparative analysis showed that the techniques employed by the OIC Post-Tensioning is cheaper than of the Freyssinet in terms of cost/strength ratio. The investigation however, reflected that techniques of application would depend on the system involving the beams, the columns and other obstruction in installing the external tendons.

The results of the study therefore, revealed that external post-tensioning can be applied for improving strength of beam, and it was also suggested that repair could also be done.