

FRP sheets contribution in common repair techniques of concrete structures with emphasis on concrete columns

ABSTRACT

The history of composites dates back to few thousand years ago. Actually, natural fibrous composites were used by ancient Egyptians to build small houses. Numerous studies have revealed that Fibre Reinforced Polymer (FRP) is a convenient material for repair and strengthening of concrete structures compared to the traditional materials. Since the presentation of fibre reinforced polymer (FRP) in the concrete structures, the need for practice codes containing FRP in field of strengthening and repair has emerged. Many parts of structures are usually replaced simply, instead of repair due to the lack of knowledge about the techniques of repair. Hence, in this review, advantages and disadvantages of FRP repair, different types of FRP repair systems, repair stages and principles of repair theory for concrete structures with FRP are reviewed. In addition, modern repair techniques are reviewed in detail for different damaged levels of concrete structures. Recent developments in the field of repair with FRP have highlighted the need for assessment of repaired concrete columns. Thus, in one part of this review, the authors emphasise different damaged concrete column repaired with CFRP. Finally, the recent needs for further researches in field of repair with FRP are discussed.

Keyword: Column; Concrete; FRP; Repair