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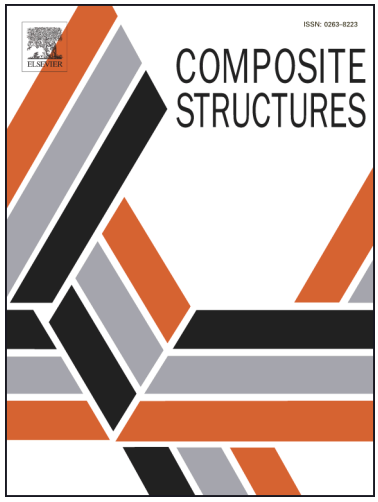

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Anant Parghi, M. Shahria Alam

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A review on the application of sprayed-FRP composites for strengthening of concrete and masonry structures in the construction sector

Anant Parghi* and M. Shahria Alam

School of Engineering, The University of British Columbia, Kelowna, V1V 1V7 - BC, Canada

Abstract

Sprayed fiber reinforced polymer (sprayed-FRP) composite applied on masonry or reinforced concrete (RC) structures, as an external reinforcement is an effective means to obtain a higher level of fiber utilization before premature failure. In the existing literature, most of the study focused on the conventional types of fibers, i.e. glass, carbon, basalt and aramid (Kevlar) FRP wraps for the repair and rehabilitation of structures. However, there are limited researchers have dedicated on the investigation on sprayed-FRP retrofitted masonry and concrete structures. This paper provides a broad overview of the recent use of sprayed-FRP composites in construction for the strengthening of RC and masonry structures and describes prospect for the possible improvement of technology. The researchers mostly focused on the main characteristics of dissimilar uses of sprayed-FRP rather than probing down to a criticism of the related scientific shape. Based on the comprehensive review, several important conclusions were re-emphasized, and further research needs to be conducted for the RC structures retrofitting with sprayed-FRP under different loading scenarios. In this review, the collected evidence prepares the basic of advanced investigation of sprayed-FRP strengthening of RC and masonry structures that are lacking in the design or serious need for repair.

Keywords: Concrete; fiber reinforced polymer (FRP); sprayed-FRP, strengthening and retrofitting, reinforced concrete and masonry structures.

*Corresponding author Tel.: (250) 807-9397, Fax: (250) 807-9850
E-mail address: anant.parghi@umanitoba.ca (Anant Parghi) * shahria.alam@ubc.ca (M. Shahria Alam)

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