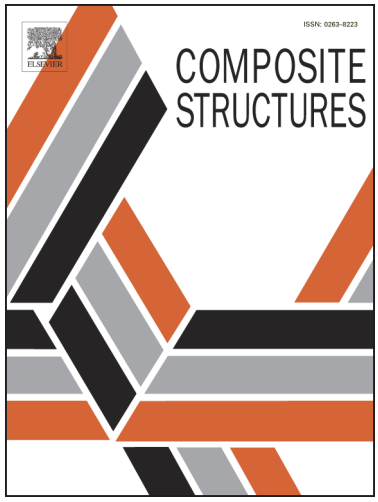

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Mohammed Elghazy, Ahmed El Refai, Usama Ebead, Antonio Nanni

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Effect of Corrosion Damage on the Flexural Performance of RC Beams Strengthened with FRCM Composites

Mohammed Elghazy[1], Ahmed El Refai[2], Usama Ebead[3], and Antonio Nanni[4]

[1] Ph.D. Candidate, Department of Civil and Water Engineering, Laval University, Quebec City, Quebec, G1V 0A6, Canada. Email: mohammed.elghazy.1@ulaval.ca (Corresponding author)

[2]Associate Professor, Department of Civil and Water Engineering, Laval University, Quebec City, Quebec, G1V 0A6, Canada. Email: ahmed.elrefai@gci.ulaval.ca

[3]Associate Professor, Department of Civil and Architectural Engineering, College of Engineering, Qatar University, P. O. Box 2713, Doha, Qatar. Email: uebead@qu.edu.qa

[4]Inaugural Senior Scholar, Professor and Chair, Department of Civil, Architectural & Environmental Engineering, University of Miami, Florida, USA. Email: nanni@miami.edu

ABSTRACT

This paper reports on the flexural behavior of corrosion-damaged reinforced concrete (RC) beams strengthened with different fabric-reinforced cementitious matrix (FRCM) composites. Three groups of beams were subjected to accelerated corrosion for 70, 140, and 210 days to obtain theoretical mass loss in their tensile steel bars of 10%, 20%, and 30%, respectively. The test parameters included the fabric type (PBO and carbon), the number of FRCM layers (two, three, and four), and the strengthening scheme (end-anchored and continuously wrapped). Test results showed that FRCM composites governed the failure of the strengthened beams rather than the damage level to which the beam was subjected due to corrosion. The reported load-