

## **Fyfe Company Technical Report Abstract FW-33**

### **Design and Retrofit of Concrete Masonry-Infilled Steel Frames Using GFRP Laminates**

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This paper presents a retrofitting methodology of concrete masonry infill panels using fiber reinforced polymer (FRP) laminates. The method is expected to enhance the system behavior under strong earthquake loads as has been shown by test results. The method also prevents the undesirable failure modes and facilitates modeling by eliminating the anisotropic nature of masonry panels and clearly defining the behavior of the retrofitted wall. The results indicate that the use of Tyfo SEH-51A with the Tyfo S epoxy matrix effectively increases the shear strength of shear assemblages up to 14 fold. The shear failure was eliminated and compression failure in the top and bottom block of the shear specimen occurred. The compressive strength of the face of the panels also increased.