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Design and Performance Evaluation of Hybrid Corrugated-GFRP Infill Panels

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Abstract : This study presents a way to reduce earthquake damage and emergency rehabilitation of critical structures such as schools, high-tech factories, and hospitals due to strong ground motions associated with climate changes. Regarding recent trend, a strong earthquake causes serious damage to critical structures and then the critical structure might be influenced by sequence aftershocks (or tsunami) due to fault plane adjustments. Therefore, in order to improve seismic performance of critical structures, retrofitted or strengthening study of the structures under aftershocks sequence after emergency rehabilitation of the structures subjected to strong earthquakes is widely carried out. Consequently, this study used composite material for emergency rehabilitation of the structure rather than concrete and steel materials because of high strength and stiffness, lightweight, rapid manufacturing, and dynamic performance. Also, this study was to develop or improve the seismic performance or seismic retrofit of critical structures subjected to strong ground motions and earthquake aftershocks, by utilizing GFRP-Corrugated Infill Panels (GCIP).

Keywords : aftershock, composite material, GFRP, infill panel
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