CFRP COMPOSITE CONNECTOR FOR
CONCRETE MEMBERS
Steel plate connections are frequently used in tiltup and precast building construction to tie adjacent wall panels together for shear and overturning effects, and also to provide continuous diaphragm chord connections for wind and seismic loading. These welded connectors perform poorly in regions of high seismicity and are vulnerable to corrosion, as well. Until now, retrofit and repair strategies for in plane shear transfer strengthening were limited to attaching steel sections across panel edges. Carbon Fiber Reinforced Plastic (CFRP) composite materials with their superior strength and resistance to environmental attack present engineers with more options. An experimental program has been completed, at the University of Utah, in which nine full-scale precast wall panel assemblies with CFRP composite connectors were tested. It is shown that the CFRP composite connection is an effective solution for the seismic retrofit and repair of precast concrete wall connections and other precast concrete elements that require inplane shear transfer strengthening.