World Academy of Science, Engineering and Technology
International Journal of Civil and Architectural Engineering
Vol:11, No:10, 2017

Cyclic Loading Tests of Reinforced Concrete Frame Structures Strengthened by Externally-Anchored Precast Wall-Panel

Authors : Seung-Ho Choi, Jae Yuel Oh, Chi Sung Lim, Ho Seong Jung, Kang Su Kim

Abstract : In recent years, various strengthening methods for buildings have been developed, but most of them require quite a long construction period during which the building users need to be patient on uncomfortable working environments including various lousy noises or even evacuation of the buildings. In this study, externally anchored precast wall-panel method (EPCW) for strengthening non-seismic reinforced concrete (RC) structures has been proposed, which is occupant-friendly technique because the strengthening walls are manufactured at factory and can be tightened to the members very quickly at the site. In order to investigate the structural performance of the specimens strengthened by the EPCW method, a total of four specimens were fabricated, and tested under axial and reversed cyclic lateral loads. The test results showed that the lateral resistances of the specimens strengthened by the EPCW method were greatly enhanced in both positive and negative directions, compared to the RC specimen having non-seismic details.

Keywords : precast wall, seismic strengthening, reinforced concrete, externally-anchored
Conference Title : ICAEI 2017 : International Conference on Architectural Engineering and Infrastructure
Conference Location : Bangkok, Thailand
Conference Dates : October 26-27, 2017