

Comparing Repaired and Undamaged Specimens Test Results of Post-Tensioned Beam to Column Connections

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Abstract : After the 1999 Marmara earthquake in Turkey research by the Turkish Precast Union stated that 24.50% of the precast structures were damaged with some of this damage being observed in the beam to column connections of the structures. Since it is essential to provide those rendered homeless by the earthquake with safe, habitable accommodation repairing medium and slight levels of damage at the connection parts should be undertaken. In order to prove that a repaired connection was sufficiently strong, a precast beam to column post tensioned connection was tested in three phases. In phase one, the middle level damage was observed at 6% drift at these connections. As a result of the extra loads applied, little damage was observed. In the last phase, the four connections tested in the first phase were repaired using epoxy resin and then retested. The results from the tests on the repaired precast and the undamaged specimens showed that the repaired specimens were sufficiently strong, thus proving that repair to damaged precast beam to column post tensioned connections can be undertaken.

Keywords : precast beam to column connection, moment-resisting connection, post-tensioned connections, repair of precast connections

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