

Investigation on an Innovative Way to Connect RC Beam and Steel Column

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Abstract : An experimental study was performed to investigate the behavior and strength of proposed technique to connect reinforced concrete (RC) beam to steel or composite columns. This approach can practically be used in several types of building construction. In this technique, the main beam of the frame consists of a transfer part (part of beam; Tr.P) and a common reinforcement concrete beam. The transfer part of the beam is connected to the column, whereas the rest of the beam is connected to the transfer part from each side. Four full-scale beam-column connections were tested under static loading. The test parameters were the length of the transfer part and the column properties. The test results show that using of the transfer part technique leads to modify the deformation capabilities for the RC beam and hence it increases its resistance against failure. Increase in length of the transfer part did not necessarily indicate an enhanced behavior. The test results contribute to the characterization of the connection behavior between RC beam - steel column and can be used to calibrate numerical models for the simulation of this type of connection.

Keywords : composite column, reinforced concrete beam, steel column, transfer part

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