

## **Performance of various connection system for IBS structure subjected to cyclic load**

### **ABSTRACT**

Nowadays, application of precast constructions is increasing, due to benefit of the industrialized building systems, specially the performance of this type of construction structures when effects of dynamic loads are considered. Precast beam column connection is mostly the critical part in the structures to resist the loads, so that the attention must be paid while designing such connections. Therefore, the aim of this study is to evaluate the efficiency of the precast concrete beamócolumn connection comparing with the conventional joints. Three-dimensional nonlinear analysis was conducted using finite element method with five beamócolumn connections under the effect of cyclic load, bearing pad, steel dowel, and steel angle cleat were used to improve the connections performance. The results indicated that the using of steel angle cleat and dowel together and doubling angle cleat have improved the lateral resistance of the precast connections as well as the lateral stiffness and the ability to dissipate damage energy when comparing with the conventional joint performance.

**Keyword:** Precast concrete structures; Beamócolumn connection; Finite element analysis; IBS structure; Cyclic load