

Evaluate performance of precast concrete wall to wall connection

ABSTRACT

The building industry keeps growing towards industrialization in construction by implementing Industrialized Building System (IBS). The components of IBS Structure which are floors, walls, columns, beams and roofs are assembled and erected on the site by properly joints to form the final units. The present study deals with the evaluation of precast wall connections subjected to inplane lateral ground movement. For this purpose, 3D finite element model of precast walls and connection is developed using finite element model. The interaction between casting concrete and precast concrete as well as reinforcements and concrete is modelled with nonlinear stress-strain behavior, to consider the yielding of steel and concrete. The model was subjected to lateral ground movement and the performance of connection is evaluated in terms of the stress, deformation and absolute plastic strain.

Keyword: Industrialized building system (IBS); Precast concrete connection; Finite element analysis