

EFFECT OF CONNECTION BETWEEN REINFORCED CONCRETE SLAB AND STEEL BEAMS IN MULTI-STORY FRAMES SUBJECTED TO DIFFERENT COLUMN LOSS SCENARIOS

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ABSTRACT

The paper investigates the contribution of floor systems to improving the progressive collapse resistance of multi-story frame buildings following loss of a column. Composite action and diaphragm effect of slab are taken into account by considering the interaction between concrete slab and steel girders. Applied Element Method through nonlinear static and dynamic analyses is applied to predict the structural response after the loss of a column. Robustness criteria are intended to be obtained taking as reference the ratio of failure load to the nominal gravity load.

Keywords: column loss, robustness, tying, composite beam, floor system, steel frame

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