

Seismic Assessment of Old Existing RC Buildings with Masonry Infill in Madinah as Per ASCE

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Abstract : An existing RC building in Madinah is seismically evaluated with and without infill wall. Four model systems have been considered i. e. model I (no infill), model IIA (strut infill-update from field test), model IIB (strut infill- ASCE/SEI 41) and model IIC (strut infill-Soft storey-ASCE/SEI 41). Three dimensional pushover analyses have been carried out using SAP 2000 software incorporating inelastic material behavior for concrete, steel and infill walls. Infill wall has been modeled as equivalent strut according to suggested equation matching field test measurements and to the ASCE/SEI 41 equation. The effect of building modeling on the performance point as well as capacity and demand spectra due to EQ design spectrum function in Madinah area has been investigated. The response modification factor (R) for the 5 story RC building is evaluated from capacity and demand spectra (ATC-40) for the studied models. The results are summarized and discussed.

Keywords : infill wall, pushover analysis, response modification factor, seismic assessment

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