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Effect of Masonry Infill in R.C. Framed Buildings

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Abstract : Effective dissipation of lateral loads that are coming due to seismic force determines the strength, durability and safety concern of the structure. Masonry infill has high stiffness and strength capabilities which can be put into an effective utilization for lateral load dissipation by incorporating it into building construction, but masonry behaves in highly nonlinear manner, so it is highly important to find out generalized, yet a rational approach to determine its nonlinear behavior and failure mode and it's response when it is incorporated into building. But most of the countries do not specify the procedure for design of masonry infill wall. Whereas, there are many analytical modeling method available in literature, e.g. equivalent diagonal strut method, finite element modeling etc. In this paper the masonry infill is modeled and 6-storey bare framed building and building with masonry infill is analyzed using SAP-200014 in order to find out inter-storey drift by time-history analysis and capacity curve by Pushover analysis. The analysis shows that, while, the structure is well within CP performance level for both the case, whereas, there is considerable reduction of inter-storey drift of about 28%, when the building is analyzed with masonry infill wall.

Keywords : capacity curve, masonry infill, nonlinear analysis, time history analysis
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