

FREE VIBRATION OF INFILLED FRAME STRUCTURES

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Seventh International Colloquium on Structural and
Geotechnical Engineering – Organized by Ain Shams University -
Dec.1996

Abstract:

In many countries infilled frames are the most usual form of construction for tall buildings of up to 30 storeys in height. The space between columns and girders of reinforced concrete are infilled by panels of brickwork or cast in-place concrete. When an infilled frame is subjected to lateral loading, the presence of the infill will increase the overall stiffness of the frame and consequently reduces its drift. In this paper, the effect of the percentage of the infilled panels to the total panels, through the height of the structure, on the dynamic characteristics on one-bay frame is studied. This study has been carried out for low-rise, medium-rise and high-rise frames. The results demonstrate that both the percentage of the infilled panels as well as their location through the height have a great effect on the dynamic characteristic of the structure and consequently, the base shear capacity.