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ANALYSIS OF RC FRAME STRUCTURE WITH STEEL BRACINGS

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ABSTRACT

The brittle nature of traditional concrete has fuelled the interest in developing fiber reinforced concretes since the random orientation of the discrete fibers in cement based matrix can lead to improved toughness and tensile properties. In this study seismic performance of an RC building using 1% Steel fiber reinforced concrete material for M30 grade concrete. Pushover analysis is conducted to evaluate the seismic responses of the structure in terms of base shear, displacement, time period and location plastic hinges. A comparative study on G+4 building with conventional RC and SFRC were analyzed and designed for gravity loads. Push over analysis has been done with displacement coefficient method. The results indicated that 15.83% of strength, 11.54% of stiffness and 4.83% of ductility are increased by using 1% of SFRC material compared to conventional concrete.

Keywords

Push over analysis, displacement coefficient method, base shear, time period, seismic responses, Steel fiber reinforced concrete, linear static analysis