ABSTRACT

In recent decades, the experiment studies revealed that the confinement reinforcement in columns improves seismic force resistance of reinforced concrete structure. Therefore, the project work involved conducting an experimental investigation into the impact of textile reinforced mortar (TRM) designs on the external confinement reinforcement in the column. In comparison to an embedded RC column with TRM confinement, the cyclic behavior of an RC column implanted with conventional confinement reinforcement is examined. For the investigation, a 1:3 scale RC column with dimensions of 150 mm x 150 mm and 1.1 m in length is taken into consideration. The reinforced concrete column has the same section size and reinforcement ratio as other characteristics, with the exception of the limited reinforcement arrangement. The cyclic behavior of an RC column implanted with traditional confinement reinforcement is investigated in contrast to an embedded RC column with TRM confinement. In order to conduct the experiment, a 1:3 scale RC column with dimensions of 150 mm x 150 mm and 1.1 m in length is used. Other properties of the reinforced concrete column, with the exception of the limited reinforcing arrangement, are the same, including section size and reinforcement ratio.

Keywords: Fixed reinforcement, Hysteresis response, Energy dissipation, displacement ductility properties, Stiffness degradation