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Experimental investigation of the R/C frame infilled by masonry wall

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SUMMARY

The results of a series of experimental investigations of the structural properties of different types of one-bay, one-story masonry infilled reinforced concrete frames are presented. Three specimens with clay-brick masonry infill, built in 1:2 reduced scale and twenty eight specimens with concrete-block masonry infill, built in 1:3 reduced scale were exposed to cyclic horizontal displacements up to the inelastic range. Half of the total number of specimens with concrete-block masonry infill were repaired and strengthened after previous tests and re-tested. Filler-walls in some specimens were reinforced and some of them had openings. Two different repair and strengthening techniques were used: (1) epoxy grouting of the infill, and (2) a combination of epoxy grouting and the application of reinforced cement plaster to both surfaces of the infill.

Following the observed response of the tested specimens, the behaviour mechanisms were defined. They provided the basic knowledge about the frame-to-infill interaction, that was used for the formulation of two inelastic models of infilled frames.