Finite Element Micro-Modeling of Infilled Frames

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ABSTRACT

In this paper, a realistic criterion is proposed to describe the frame-infill separation, in order to better simulate the complicated behavior of infilled frames under lateral loads. The basic characteristic of this analysis is that the infill/frame contact lengths and the contact stresses are estimated as an integral part of the solution, and are not assumed in an ad-hoc way. In order to implement the method, a specific computer program for the analysis of infilled plane frames, under lateral loads, has been developed. Using this method, the response of a single-bay single-story masonry infilled R.C frame, under a lateral load in the beam level, has been investigated. The large magnitude of the variation of the contact lengths between the infill and the different frame members is clearly shown.