

A MULTI-LEVEL APPROACH FOR MICRO-CRACKED VISCOELASTIC MASONRY

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This research contributes to the micro-macro modeling of refractory lining present in many reactors (like steel converter or blast furnaces). In order to simplify this study, we consider that the masonry is periodic and that only one component (the mortar) is a micro-cracked viscoelastic material [4]. The objective is to determine the effective and local behavior of this masonry without crack propagation. This study is based on the coupling between homogenization techniques and brittle fracture mechanics [1, 3]. The relevance of the proposed methodology is assessed through numerical simulations carried out for some examples of masonries available in the literature [2, 1].

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