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EXPERIMENTAL EVALUATION OF MECHANICAL PROPERTIES OF REPLICA MATERIALS FOR SEISMIC ASSESSMENT OF TRADITIONAL MASONRY BUILDINGS IN EASTERN CANADA

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Abstract:
Urban centres in eastern Canada have a large stock of older buildings made of unreinforced brick masonry (UBM). The evaluation of their seismic resistance uncertain as information on the wall composition, geometry and material mechanical properties is limited. This paper presents an experimental characterisation of the mechanical properties of manufactured moulded brick masonry; these are typically used as replica of traditional masonry in the remediation projects. Weak cement-lime mortar is used to match the mechanical properties of the original traditional cement-lime mortar. Fifty-eight brick masonry specimens made of typical moulded brick units and two types of cement-lime mortar (type N and O) were tested to obtain masonry compressive strength, flexural strength and shear bond strength. The experimentally reported material strength properties presented in the paper falls within the range of the corresponding properties and models reported in the literature for old traditional brick masonry buildings.

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