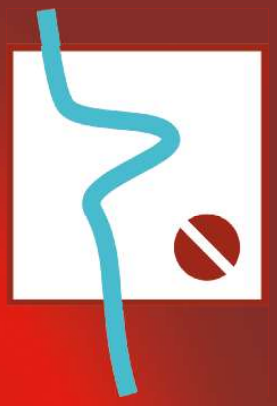
Building Pathology and Rehabilitation



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Structural Characterization and Seismic Retrofitting of Adobe Constructions

Experimental and Numerical Developments

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Contents

Mechanical Characterization of Adobe Masonry

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Abstract The characterization of the mechanical properties and behaviour of adobe masonry is fundamental for the understanding of the structural behaviour of adobe constructions. Thus, in the last decades, experimental studies focused on this topic have been carried out by different authors. Many of the existing experimental works, however, were carried out aiming to support broader studies focused on the seismic behaviour of adobe constructions and are not very detailed. Moreover, authors tend to adopt different procedures in their experimental work, since there are few indications in existing standards for testing adobe masonry. The wide variety in materials used, both for the adobes and mortars, further complicates this work, making it difficult to compare results obtained in different studies. This chapter provides an overview of the indications given by standards and other technical recommendations for the mechanical testing of adobe masonry. It presents a review of existing research on the mechanical behaviour of adobe masonry, addressing studies that focus on: (i) compression behaviour, (ii) shear behaviour, (iii) joint shear behaviour. It provides a global analysis of the existing knowledge, suggesting improvements for normative documents and identifying future research needs.

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