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Abstract

Existing earthen architectural building is often affected by degradation, mainly due to the fragility of the construction material itself together with the lack of maintenance as a result of economic and social changes. The main threats to this heritage have been already identified and have been widely discussed, but the limited specific knowledge on this architecture, particularly in the field of structural analysis, does not always allow an appropriate intervention.

The present dissertation aims at contributing to the understanding on the structural behaviour of rammed earth architectural heritage, as well as to the developing of a feasible technique to repair structural cracks caused by earthquakes and weathering. To this aim, the specific nature of the material will be pointed out, and the most relevant aspects within the structural assessment of rammed earth buildings will be presented and discussed. The suitability of the grout injection as a repair/strengthening solution for rammed earth will be assessed within an extensive experimental programme performed in the Structural Laboratory of the University of Minho.

Table of contents

1. INTRODUCTION
 - 1.1 Motivations
 - 1.2 Description of the problem
 - 1.3 Objectives
2. LITERATURE REVIEW
 - 2.1 Introduction
 - 2.2 The raw material: nature and properties of soils
 - 2.2.1 Clay minerals as the binding agent
 - 2.3 Earth as building material
 - 2.3.1 General overview of earth construction techniques
 - 2.3.2 Rammed earth construction technique
 - 2.3.3 Mechanical behaviour of rammed earth structures
 - 2.4 Damage and vulnerability of rammed earth structures
 - 2.4.1 Vulnerability against water
 - 2.4.2 Biological actions
 - 2.4.3 Mechanical damages
 - 2.4.4 Seismic vulnerability
 - 2.5 Conclusions
3. SURVEY ON RAMMED EARTH HERITAGE
 - 3.1 Introduction
 - 3.2 Traditional architecture in Southern Portugal
 - 3.3 On-site investigation
 - 3.4 Structural survey
 - 3.4.1 Walls
 - 3.4.2 Roofs
 - 3.4.3 Plasters
 - 3.5 Damage survey
 - 3.5.1 Mechanical damage
 - 3.5.2 Physical damage
 - 3.6 Empirical seismic improvements
 - 3.7 Conclusions
4. UNSTABILISED RAMMED EARTH ASSESSMENT
 - 4.1 Introduction
 - 4.2 Soil identification
 - 4.2.1 Texture and cohesion
 - 4.2.2 Plasticity
 - 4.2.3 Compaction
 - 4.2.4 Durability
 - 4.3 Mechanical properties
 - 4.3.1 Uniaxial compression test
 - 4.3.2 Flexural bending strength
 - 4.3.3 Diagonal compression tests
 - 4.4 Conclusions
5. REPAIR OF RAMMED EARTH BY MEANS OF GROUT INJECTION
 - 5.1 Introduction
 - 5.2 Grout injection of cracks
 - 5.2.1 Grout properties
 - 5.3 Grout injection of rammed earth specimens
 - 5.3.1 Characterization and preparation of grouts
 - 5.3.2 Injection of the rammed earth wallets
 - 5.3.3 Diagonal compression tests of rammed earth wallets
 - 5.4 Sonic tests
 - 5.4.1 Fundamentals of sonic test
 - 5.4.2 Sonic testing procedure

5.4.3 Direct sonic tests
5.4.4 Indirect sonic tests
5.5 Conclusions
6. Conclusions and future work
6.1 Main conclusions
6.2 Future research
REFERENCES
ANNEXES
A. RESULTS OF THE DIAGONAL COMPRESSIVE TESTS
B. RESULTS OF THE SONIC TESTS