

Abstract

Unstabilised rammed earth is a recyclable, economical and eco-friendly building material, used in the past and still applied today. Traditionally, its use was based on a long empirical knowledge of the local materials. Because this knowledge was mostly lost or is no longer sufficient, in many countries normative documents have been produced to allow the assessment of rammed earth soils. With the aim of contributing for a refining of these normative requirements, this article presents a research work that included: (i) collection of unstabilised rammed earth samples from six constructions in Portugal; (ii) a literature survey of normative and complementary documents to identify the most mentioned key-properties, the test procedures and the corresponding threshold limits; (iii) a discussion of the test procedures and of the thresholds limits in the light of the experimental results. The analyzed properties are the particle size distribution, maximum particle size, plasticity, compaction, linear shrinkage, organic content and salt content. The work highlights the advantages of taking into account the characteristics of existing constructions as a basis for the establishment and further refining of consistent threshold values. In particular, it shows that it is essential to adjust the requirements to the specificities of local materials.