

Home > List of Issues > Latest articles > Unstabilised Rammed Earth: Characterization of Material Collected from Old Constructions in South Portugal and Comparison to Normative Requirements

[Browse journal](#)

[View all volumes and issues](#)

[Current issue](#)

[Latest articles](#)

[Most read articles](#)

[Most cited articles](#)

[Authors and submissions](#)

[Subscribe](#)

[About this journal](#)

**International Journal of Architectural Heritage:
Conservation, Analysis, and Restoration**

Select Language ▼

Translator disclaimer



Unstabilised Rammed Earth: Characterization of Material Collected from Old Constructions in South Portugal and Comparison to Normative Requirements

Access options

DOI:

10.1080/15583058.2012.683133

M. Idália Gomes^{ab*}, Teresa Diaz Gonçalves^a & Paulina Faria^c

Publishing models and article dates explained

Received: 12 Dec 2011

Accepted: 3 Apr 2012

Accepted author version posted online: 23 Apr 2012

Article Views: 38

[Alert me](#)

- [TOC email alert](#)
- [TOC RSS feed](#)
- [Citation email alert](#)
- [Citation RSS feed](#)

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.

- [View full text](#)

• 

Keywords

- unstabilised rammed earth,
- earth construction,
- soil properties,
- requirements,
- normative documents

Related

•

- Add to shortlist
- Link

Permalink

<http://dx.doi.org/10.1080/15583058.2012.683133>

- Download Citation
- Recommend to:
 - A friend

- Information
- Full text
- References
- Reprints & permissions

Details

- **Received:** 12 Dec 2011
- **Accepted:** 03 Apr 2012
- **Accepted author version posted online:** 23 Apr 2012



Disclaimer

As a service to authors and researchers we are providing this version of an accepted manuscript (AM). Copyediting, typesetting, and review of the resulting proofs will be undertaken on this manuscript before final publication of the Version of Record (VoR). During production and pre-press, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal relate to these versions also.

Author affiliations

- ^a National Laboratory for Civil Engineering (LNEC), Av. do Brasil 101, 1700-066, Lisbon, Portugal
- ^b Lisbon Engineering Superior Institute (ISEL), Rua Conselheiro Emídio Navarro 1, 1959-007, Lisbon, Portugal
- ^c Nova University of Lisbon (UNL), Civil Engineering Department, 2829-516, Caparica, Portugal