**Title in English**

Título em Português

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| --- | --- | --- |
| **ABSTRACT**The abstract of the article must be written in English. The abstract must contain a maximum of 1500 characters with spaces (between 200 and 300 words), in a single paragraph, single spacing, size 10. The abstract must clearly, concisely and objectively present the theme, the objective, the materials and methods, the most important results and the main conclusions of the study. |  | **Keywords:** |
| Between 3 and 6 keywords and separated by semicolons. |
| **RESUMO** |  |  |
| O resumo do artigo deve ser redigido em língua portuguesa. O resumo deve conter no máximo 1500 caracteres com espaços (entre 200 e 300 palavras), em um único parágrafo, espaçamento simples, tamanho 10. O resumo deve apresentar de forma clara, concisa e objetiva o tema, o objetivo, os matérias e métodos, resultados mais importantes e as principais conclusões do estudo. |  | **Palavras-chave:** |
| Entre 3 e 6 palavras-chave e separadas por ponto e vírgula. |
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# **1. Introduction**

This model serves as a reference for the writing and organization of articles submitted to the Engenharia Civil UM. You should review the instructions and format your article according to the instructions available on the journal website and in the template.

The introduction should address the subject of the work based on the existing literature on the topic. The Engenharia Civil UM recommends that authors preferably use the following sequence as the general structure of the articles: 1. Introduction; 2. Materials and Methods; 3. Results; 4. Discussion; 5. Conclusion; 6. Acknowledgments; 7. References; 8. Appendix.

The article must be prepared in a MSWord word processor (file with doc or docx extension) and must be typed in single line spacing, size 11, Times New Roman font. The full article must not have a number of pages less than 10 (ten).

The title of the article must be aligned to the left, size 15 in bold, single spaced, with capital letters at the beginning of the sentence and must be followed by its translation into Portuguese. The authors' names must appear in the sequence and with the names aligned to the left, size 12, single spacing, according to the example provided in this template.

The titles of the sections of the article must be aligned to the left. The font Times New Roman, size 12, should be used, in bold, capital letters at the beginning of the sentence, spacing between single lines, spacing between paragraphs before 18pt and after 6 pt. Titles must not be followed by a dot.

Articles must include some mandatory pre-textual elements: title, abstract and keywords in Portuguese and in English.

# **2. Materials and Methods**

In this section, the authors must describe the methods adopted in the study, including the steps taken for its development. The materials, instruments, procedures, resources and tools used must be presented in detail, as well as the way in which the data were collected, organized and analysed.

The appendix can be used to describe the details of the experimental procedure, fabrication or mathematical developments used in the course of the work.

*2.1. Title level 2*

Subtitles should be left-aligned, size 11, italicized, capitalized at the beginning of the sentence, single line spacing, paragraph spacing before 12pt and after 6 pt.

Equation: the style is used to align the MS Equation object and its respective number. This style is based on “Text”, with double tabs: the first for the MS Equation object, aligned to the centre, and the second for the numbering of the equation, adjusted to the right margin, as shown in the example below:

|  |  |
| --- | --- |
| $$Minimizar\sum\_{r=1}^{R}\sum\_{k=1}^{K}W\_{r}P\_{k}E[∆T\_{op}]\_{rk}$$ | (1) |

To enter two equations, it is possible to copy and paste the previous line in the following one, the style is automatically applied. All equations should be numbered sequentially.

# **3. Results**

In this section, the author must present all the results obtained. The results can be presented together with a discussion of their meaning. The Engenharia Civil UM recommends that the articles include an in-depth discussion based on information from the literature and that it be presented in a separate section.

Authors must ensure that all experimental results have their respective statistical analysis. The appendix can be used to present details of the analysed results.

The figures are presented with the title in bold and the legend must be concise and positioned below, as illustrated in the example:



**Figure 1 –** Figure legend.

To ensure good readability, the figures that might be created must be saved in .jpg format, with a minimum resolution of 300 dpi and minimum size of 1024 pixels at the longest side. The figure must be located and dimensioned in the body of the article.

The preferred model for presenting the tables is shown in Table 1.

**Table 1 -** Legend.

|  |  |  |  |
| --- | --- | --- | --- |
| **Title** | **Parameter** | **Parameter** | **Parameter** |
| A | Value | Value | Value |
| B | Value | Value | Value |
| C | Value | Value | Value |
| D | Value | Value | Value |

The legend must be aligned to the centre, size 11, font Times New Roman, in bold. All decimal places must be separated by a dot.

# **4. Discussion**

In this section the authors must add the scientific content of the work, obtained through the analysis of the results presented in the previous section, with the due support of the available literature on the subject, the justification of behaviours and justification of specific conditions.

# **5. Conclusion**

The conclusions should be concise and represent the most important aspects found during the development of the work. In this section the authors are encouraged to identify the scientific, technological and/or theoretical advances achieved with the development of the work carried out.

# **Acknowledgments**

This work was partly financed by FCT/MCTES through national funds (PIDDAC) under the R&D Centre for Territory, Environment and Construction (CTAC), under reference UIDB / 04047/2020.

# **References**

The Engenharia Civil UM adopts the style of numbered references: citations must be indicated in the text by the last name of the author(s), in capital letters at the beginning of the sentence, followed by the reference number in square brackets. Example: ‘… as demonstrated [1,2]. Cunha and Aguiar [8] obtained different results…’.

 The list of references must be presented at the end of the article. For citations made in the body of the text, the expression in Latin - et al. - must be used for all articles that have more than three authors.

 Journal names should be abbreviated according to the *List of Title Word Abbreviations* (https://www.issn.org/services/online-services/access-to-the-ltwa/).

**Reference to a journal publication:**

[1] L. Cabeza, A. Castell, C. Barreneche, A. de Gracia, A. I. Fernández, Materials used as PCM in thermal energy storage in buildings: A review, Renewable Sustainable Energy Rev., 15 (2011) 1675-1695. https://doi.org/10.1016/j.rser.2010.11.018.

**Reference to a book:**

[2] R. Abraham, J.E. Marsden, T. Ratiu, Manifolds, tensor analysis and applications, second ed., Springer-Verlag, New York, 1988.

**Reference to a chapter in an edited book:**

[3] G.R. Mettam, L.B. Adams, How to prepare an electronic version of your article, in: B.S. Jones, R.Z. Smith (Eds.), Introduction to the Electronic Age, E-Publishing Inc., New York, 2009, pp. 281–304.

**Article published in Scientific Conference:**

[4] M. Kheradmand, J. Aguiar, M. Azenha, Assessment of the thermal performance of plastering mortars within controlled test cells, In: Congresso Luso-Brasileiro de Materiais de Construção Sustetáveis, 5–7 de Março, Guimarães, Portugal, 2014.

**Reports:**

[5] D.A.Garret, The microscopic detection of corrosion in aluminum aircraft structures with thermal neutron beams and film imaging methods, In: Report NBSIR 79-1434, National Bureau of Standards, Washington, D.C., 1977.

**Dissertations and theses:**

[6] M. Kheradmand, Incorporation of hybrid phase change materials in plastering mortars for increased energy efficiency in buildings, PhD. Theses, University of Minho, Guimarães, Portugal, 2016.

**Reference to a website:**

[7] Statistics about Portugal and Europe, Statistical data. https://www.pordata.pt/en/Europe, 2021 (accessed 12 September 2021).

**Standards:**

[8] European Committee for Standardization (CEN). EN 1015-11:1999, Methods of Test for Mortar for Masonry – Part 11: Determination of Flexural and Compressive Strength of Hardened Mortar, 1999.

**Software:**

[9] E. Coon, M. Berndt, A. Jan, D. Svyatsky, A. Atchley, E. Kikinzon, D. Harp, G. Manzini, E. Shelef, K. Lipnikov, R. Garimella, C. Xu, D. Moulton, S. Karra, S. Painter, E. Jafarov, S. Molins, Advanced Terrestrial Simulator (ATS) v0.88 (Version 0.88), Zenodo, March 25, 2020. https://doi.org/10.5281/zenodo.3727209.

**Dataset:**

[dataset] [10] M. Oguro, S. Imahiro, S. Saito, T. Nakashizuka, Mortality data for Japanese oak wilt disease and surrounding forest compositions, Mendeley Data, v1, 2015. https://doi.org/10.17632/xwj98nb39r.1.

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