

# Review of: "Enhancing Soil Stabilization in Soft Soils Through The Addition of Sand to Soil-Cement Piles: a Comprehensive Study"

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Potential competing interests: No potential competing interests to declare.

## Title:

- The title provides a clear indication of the research topic and the specific focus on enhancing soil stabilization in soft soils through the addition of sand to soil-cement piles. It effectively communicates the comprehensive nature of the study.

## Authorship and Affiliation:

- The author's name and affiliation are clearly presented. However, additional information about the author's expertise or background in the field could enhance the credibility of the research.

## Abstract:

- The abstract succinctly summarizes the key elements of the research, including the methodology, findings, and potential applications. However, it would benefit from a more explicit mention of the significance and contributions of the study to the existing body of knowledge.

## Introduction:

- The introduction effectively outlines the background of soil stabilization methods, particularly focusing on soil-cement mixtures. It provides a good context for the study. However, it would be helpful to include a statement explicitly stating the research objectives or questions.

## Literature Review:

- The literature review provides a comprehensive overview of soil stabilization methods and the challenges associated with cement piles. The inclusion of recent advancements or alternative approaches in soil stabilization could further enrich this section.

## Challenges and Future Directions:

- This section effectively highlights the challenges associated with cement piles and emphasizes the need for further

research and optimization. Consider elaborating on specific areas where improvements are required and suggesting potential research directions.

#### **Method of Soil Stabilization:**

- The section on soil stabilization methods is informative, covering various aspects of the process. However, providing more details on the specific procedures used in the study and the rationale behind the selection of certain methods would enhance clarity.

#### **Purpose, Soil Type, Treatment Options (Table 1):**

- The inclusion of Table 1 is valuable in summarizing the purpose, soil types, and treatment options. Consider adding a brief narrative to elaborate on the information presented in the table.

#### **Stabilizing Soil with Inorganic Binders:**

- The section on ECO CSSB is well-articulated, explaining the operational mechanism and benefits of this supplementary material. However, the integration of more references or comparisons with similar materials in the literature would strengthen the discussion.

#### **Soil Stabilization with Soil-Cement-Sand Mix:**

- The section provides a detailed account of the experimental setup and parameters considered. However, clarifying the rationale behind the selection of specific sand ratios and the potential implications of varying these ratios would improve the understanding of the study.

#### **Research on Weak Soil Improvement:**

- The section effectively outlines the parameters considered in the experimental testing. Consider providing more information on the selection of Ben Tre city and Binh Dai district for soil sample collection.

#### **Testing on Soil Samples:**

- The experimental design and apparatus are well-described. However, more details on the selection criteria for different sand ratios and the reasoning behind introducing the CSSB additive at a specific concentration would enhance the methodological transparency.

#### **Results of Experiments (Tables 2-5):**

- The presentation of results in tables is clear and organized. Ensure consistency in labeling and clarity in units across the tables. Consider including a discussion of any notable trends or patterns observed in the results.

#### **Figure 1:**

- The inclusion of Figure 1 adds visual context to the experimental setup. Providing a brief caption or description would

aid readers in understanding the components of the experimental apparatus.

**Conclusion:**

- The conclusion provides a concise summary of the key findings. Consider explicitly stating the practical implications of the study and potential applications in real-world construction projects.

**Overall Impression:**

- The article is well-structured, and the research is presented in a systematic manner. Clarifying certain methodological aspects and expanding the discussion in key sections would further enhance the manuscript. The study contributes valuable insights to the field of soil stabilization and offers a foundation for future research.