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

Zohra Boutaraa[1]

1 Université de Chlef

Potential competing interests: No potential competing interests to declare.

The article proposes a solution for the reinforcement or stabilization of weak soils in both cases: saline–alkali soils using the ECO CSSB process, and non-saline soils using ECO SCB materials with an addition of sand to the soil.

By suggesting the use of ECO CSSB, whose mechanism related to the cement hydration process under saline water conditions is motivating, the article adds valuable understandings. This is an interesting addition to the field of soil stabilization, especially in the case of contaminated soils. But the paper lacks some important details concerning the adopted methodology and needs to be revised.

The introduction is to be reformulated to introduce the article's idea and its effectiveness in the geotechnical field. Note that the references are not cited within the entire text, which is considered an infraction of academic and scientific writing. As an example, Table 1 presents a guideline for soil treatment methods, so it needs to be referenced to acknowledge the original sources.

The acronyms ECO CSB and ECO-CSSB need to be specified and briefly defined in the introduction.

In the section "Testing on soil samples," the author said: “The variation in cement content spanned 200, 250, and 300 kg/m3 per cubic meter of soil .” Can this cement weight be considered as an economic and environmental solution????

What are the physical characteristics of the added sand?

In Table 1, what does the author mean by "Regional Characteristics"? Is it a purpose of ground stabilization?

In section : Research on Weak Soil Improvement, the author cites the curing time but without giving precisions about this factor.

In section: Testing on soil samples, what kind of compaction method is used, and what relative density of samples is obtained?

In Tables 2, 3, and 4, are columns 4, 5, and 6 concerned with the sand quantity added to the soil?

The compression test results for samples are done at 18 days and 28 days. It would be interesting to do this test at 90 days, since the cement hydration continues till this age.

Finally, the paper is interesting but lacks some important details concerning the adopted methodology and needs to be revised in the aim to reach a good level of reader comprehension.