



SDI Review Form 1.6

PART 1:

Journal Name:	<u>British Journal of Applied Science & Technology</u>
Manuscript Number:	MS: 2013_BJAST_3041
Title of the Manuscript:	Improvement of the Properties of Black Cotton Soils Using “Ionic Soil Stabilizer 2500.

General guideline for Peer Review process is available in this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

- This form has total 9 parts. Kindly note that you should use all the parts of this review form.



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PART 2: Review Comments

	Reviewer's comment (REVIEWER 5)	Author's comments (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<u>Compulsory</u> REVISION comments	Because of the reasons given below, the reviewer suggests rejecting the paper. • The English of the paper is very poor and not easy to understand. • The manuscript is not very well written and is poorly organized. • Novelty of the study is missing. • Many assertion made by the authors are not supported by data and so they remain pure speculations. • Data are incomplete, e.g. the mineralogy of the black cotton soil is missing. What is the percentage of montmorillonite in the soil samples used in the study? • In the "Introduction" section, the results in the published literatures were explained too detailed, but the research ideas of this study were limited. • In the manuscript, there are poor and unclear sentences, e.g. lines: 25, 41, 42, 46, 47, 85, 86, 144, 145, and 343. • Some references need to be given in the manuscript, e.g. line 77: waste disposal	I have tried to be as coherent as possible. The manuscript has been improved. The last paragraph of the introduction addresses this. The ones identified by the reviewer have been addressed. The mineralogy and chemical composition of the black cotton soil and the stabiliser are contained elsewhere (Alhassan and Sulaiman, 2012) and (Alhassan and Chukwuma, 2013). The focus of the paper is on effect of the stabilizer on black cotton soil. This is stated in the last paragraph of the introduction. Lines 41 to 46 are ok and 86 and 86 have been improved. Lines 144 and 145 have been expunged in accordance with REVIEWER 2 comments.



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	(reference should be given), Line 94: <i>are improved</i> (reference should be given), Line 99: <i>marginal soils</i> (reference should be given), etc. - Figures 9-13 have been explained very superficially. The results of the study have not been discussed sufficiently in the “Discussion” section. - There are some contradictions in the findings, e.g. in Figure 10, the plasticity index of the TRIAL PIT 1 is increasing with the increase in the stabilizer content. However, the linear shrinkage limit of the same soil decreases with the increase in the ionic soil stabilizer. How? Should be explained. In Figure 13, the maximum dry density decreases at 2 ml and 3 ml ionic soil stabilizer. However, at the same concentrations, an increase in the CBR values was obtained. How? Should be discussed in detail. - The results of the study have not been summarized accurately in the conclusion section. The third paragraph (lines 388-390) given in the conclusion section is not clear and	The reference is contained in line 79 as (Arya and Yasrobi, 2009). Line 94 corrected in accordance with REVIEWER 1 & 2 comments. Reference is given as (Alhassan and Chukwuma, 2013) The explanations of figs 9-11 have been improved. This may due to the effect of the stabiliser. One way out of this is to consider the long term effects of the stabilizer on the clay soils. This will require another study. Unfortunately that is the finding. The MDD at 2 and 3ml content is clearly at variance with the expected trend. Does the stabiliser have a self-inhibiting effect at higher concentrations? Is the time period between the MDD test and the CBR test long enough to progress the ionisation of the water in voids to enhance CBR increment? The authors experience with the stabiliser on other soil types does not reveal a remarkable increase in CBR and MDD with ISS increment. Is the ISS as efficient as it is being proclaimed? These questions could better be answered by doing studies on the stabiliser with a comparative analysis with cement-stabilised soil mixes. That paragraph is meant to explain the inconsistency in the performance of the stabiliser on black cotton soil. As mentioned in the text ,
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	understandable. It is not in harmony with the fact that the soils with higher cation exchange capacity have higher plasticity index values. • Overall, the discussion of the findings is poor and insufficient.	there are mixed effects of the stabilizer on the black cotton soil. The discussion has been improved.
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Minor REVISION comments	• The quality of the figures (Figs. 2-5) in pages 4-6 is not good. The figures are not clear and readable. • Figure 1 does not indicate an equation. It describes a chemical reaction. • Table 1 is not well organized. The format should be checked. • References should be given for Figures 2-5: whose findings are those given in these figures (Figs 2-5). Not clear. • Line 298: It should not be written as: <i>Atterberg parameters</i>. It should be <i>Atterberg limits</i>. • Line 306: Is it the <i>shrinkage limit</i> or the <i>linear shrinkage</i>? These two terms are different. Should be corrected. • The format of the figure captions is not the same for all the figures in the manuscript. Should be corrected. • Figures 9, 10, 13 are too small and they are not clear and understandable. It is difficult to follow the changes in the soil behaviour.	Figs 1 to 5 come under section 2.1; mechanism of the reaction and are expunged in accordance with REVIEWER 2 comments. Fig 1; Ditto as above Table 1 is reformatted. Figs 2 to 5 expunged as above. Corrected as per REVIEWER 4 comments Linear shrinkage is the correct term as in Table 1 Line 306 corrected. Format of figs corrected as by REVIEWER 2, 3, and 4 comments. Figs 9, 10 and 13 improved.
Optional/General comments	• Limited references are given in the manuscript. In many places, the authors refer to the <i>Road Material Stabilizers, 1990</i>. What about the other publications related to the subject? More references should be given. • In page 2, line 33 <i>Smectite</i> is not a group of soil. It is a type of mineral. Should be corrected.	References addressed according to REVIEWER 1, 2 and 3 comments. Line 33: Sentence is reframed to read “Smectite mineral contained in soils”



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	• In page 2, line 88 Montmorillonite is a mineral type. It is not a soil type. Should be corrected.	Line 88: Sentence is reframed to read “The cation exchange capacity (CEC) of soils containing montmorillonite”
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The reviewer comments and the responses made are the same as the first round review exercise. The authors stand by their earlier responses.