

Review Form 3

Journal Name:	Journal of Materials Science Research and Reviews
Manuscript Number:	Ms_JMSRR_125592
Title of the Manuscript:	Lengths and Content Variation of Oil Palm Broom Fibre (OPBF) and Lime on the Physico-Mechanical Properties of Compressed Earth Blocks
Type of the Article	Original Research Article

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PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback (Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</p>	<p>This paper is relevant for the scientific community because it tackles a real demand for sustainable and environmentally acceptable construction materials, particularly in poor countries. By investigating the use of Oil Palm Broom Fibre (OPBF) and lime to improve the physico-mechanical properties of compressed earth blocks, it helps to reduce carbon emissions and waste while promoting cost-effective construction methods. The study addresses a vacuum in the literature on the use of OPBF in construction by providing useful insights into enhancing the durability, water resistance, and structural integrity of earth-based materials, which is critical for sustainable housing development.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>YES</p>	
<p>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</p>	<p>NO</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>YES</p>	
<p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p>	<p>This work shows scientific robustness with its well-structured experimental design and extensive examination of compressed earth blocks stabilised with OPBF and lime. Standardised testing methods including compressive and tensile strength tests, water absorption measurement, and SEM imaging assure reproducible results. The research follows BS EN and ASTM standards, which increases the conclusions' technical validity. The statistical analysis-supported identification of ideal fibre length and content strengthens the conclusions. Additionally, the work fills a well-defined research need, benefiting sustainable construction materials.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p>	<p>YES</p>	

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<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>YES</p>	
<p>Optional/General comments</p>	<p>COMMENTS TO AUTHOR</p> <ol style="list-style-type: none"> 1. How does the particle size distribution of the laterite influence the overall mechanical properties of OPBF and lime-stabilized compressed earth blocks? 2. What are the potential effects of using higher OPBF content (greater than 0.75%) on the compressive and tensile strength of the blocks? Could this lead to diminishing returns or reduced durability? 3. In terms of scalability, how would the manufacturing process for OPBF-stabilized compressed earth blocks change for large-scale production? What challenges in consistency or quality control could arise? 4. How does the addition of OPBF affect the thermal conductivity of the compressed earth blocks? Would the use of these blocks provide thermal benefits in hot climates? 5. Can OPBF be used in combination with other natural fibers or additives to further enhance the mechanical or thermal properties of the blocks? 6. How resilient are these OPBF-stabilized blocks to extreme weather conditions like heavy rainfall, freezing temperatures, or high humidity over the long term? 7. How do the micro-gaps and cracks observed in the SEM analysis of OPBF-stabilized blocks affect their long-term structural integrity, especially under cyclic loads or other dynamic stresses? 8. Are there any potential chemical interactions between the lime and OPBF over time that could degrade the fibers or affect the stability of the composite material? 9. Could the findings on optimal fiber length (20mm) and content (0.5%) be generalised to other types of fibers, such as coconut or sisal, or are these parameters specific to OPBF? 10. How does the use of OPBF and lime-stabilized blocks compare to other eco-friendly building materials, such as Adobe or straw-bale construction, in terms of cost, performance, and environmental impact? 	

PART 2:

	<p>Reviewer's comment</p>	<p>Author's comment <i>(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)</i></p>
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

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