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REVIEWER'S REPORT

Manuscript No: IJAR-52857 **Date: 18-07-2025**

Title : USE OF POLYETHYLENE TEREPHTHALATE (PET) PLASTIC WASTE IN MORTAR.USE OF POLYETHYLENE TEREPHTHALATE (PET) PLASTIC WASTE IN MORTAR.

Rating	Excel.	Good	Fair	Poor
Originality	-	-		
Techn. Quality	-			
Clarity				
Significance		-		

Recommendation:
Accept as it is .....
Accept after minor revision.....
Accept after major revision .....
Do not accept (*Reasons below*) .....

Reviewer Name: Dr Aamina

Detailed Review Report

Manuscript Overview
This manuscript presents a well-structured experimental investigation into the potential use of polyethylene terephthalate (PET) plastic waste as a partial sand replacement in mortar production. The study addresses a highly relevant and timely environmental challenge by exploring sustainable solutions to plastic waste accumulation through its incorporation in cementitious materials. The research is both scientifically and socially relevant, given the growing emphasis on green construction materials and circular economy principles.

Content Quality
The manuscript provides a detailed and systematic approach to the experimental study. The introduction effectively establishes the context by linking the environmental concern with existing literature, demonstrating both the need for and precedent of the current research. The use of PET fibers at various percentages and combinations of cement dosages and water/cement ratios presents a comprehensive matrix for performance analysis.

Experimental Design and Methods
The methodology section is clear, with sufficient detail provided about the materials, their sourcing, and physical properties. The study applies a sound scientific approach with appropriate testing methods for evaluating fresh-state density, water absorption, flexural strength, and compressive strength. The use of standard norms, such as NF P 18-560 for granulometric analysis, strengthens the experimental credibility.

Findings and Analysis
The results are well-articulated. Notably, the observation that PET additions maintained fresh-state density and even improved compressive strength at certain incorporation rates is significant for potential

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application. The trend showing reduced flexural performance contrasts with the improved compressive behavior, which is clearly highlighted. The consistency in data reporting and interpretation lends robustness to the findings.

Relevance and Contribution
The paper makes a meaningful contribution to the ongoing research on eco-friendly and sustainable construction materials. Its regional specificity (use of materials from Togo) adds a valuable geographical dimension, contributing to a more global understanding of green building practices. The study aligns well with sustainability goals and offers data that can support further research or policy considerations.

Presentation
The manuscript is generally well-written, with coherent flow and scientific rigor. The tables and references are appropriate and help support the discussion.

Summary
This study is a relevant and well-executed contribution to sustainable construction research. It combines environmental responsibility with material science through the reuse of plastic waste in mortar production. The experimental approach is methodically sound, and the results are clearly reported and discussed.