

Review Form 3

Journal Name:	Journal of Engineering Research and Reports
Manuscript Number:	Ms_JERR_126104
Title of the Manuscript:	Research Progress on Properties of Fiber Ce-ment-based Composites
Type of the Article	Review Article

Review Form 3

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 review journal provides a comprehensive analysis of cement-based composites, particularly focusing on the integration of fiber materials like polypropylene, polyacrylonitrile, polyvinyl alcohol (PVA), and steel fibers to enhance the material's mechanical properties. It highlights the current challenges faced by cement-based materials, including low tensile strength, poor toughness, and susceptibility to cracking, which lead to durability issues like corrosion and structural degradation.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>The title of the article could be improved to better reflect the focus on fiber reinforcement and its impact on the mechanical properties of cement-based composites. A more specific and descriptive title could help readers understand the core content briefly. Suggested alternative title: "Enhancing Mechanical Properties and Durability of Cement-Based Composites through Fiber Reinforcement: A Comprehensive Review"</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>The abstract could more explicitly state the existing limitations of conventional cement-based materials (low tensile strength, poor toughness, and susceptibility to cracking). Include a brief mention of the different fibers (polypropylene, PVA, steel, etc.) and summarize their specific contributions (e.g., steel fibers improve tensile strength, polypropylene enhances fire resistance, etc.). Summarize the core findings regarding the improvement of mechanical properties such as crack resistance, tensile strength, and durability with fiber reinforcement.</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>The overall structure of the manuscript is generally appropriate, as it logically progresses from an introduction of cement-based composites, discusses their limitations, and then moves into detailed sections on fiber reinforcement and specific types of fibers like steel fibers. However, some subsections could be better organized and more clearly defined to enhance readability and logical flow.</p> <p>Introduction: This section provides a good overview but could be more concise. Consider focusing more on the limitations of conventional cement-based composites and the need for fiber reinforcement.</p> <p>Fiber-Reinforced Cement-Based Composites: This section could be broken down into clearer subsections for each fiber type (e.g., Polypropylene Fiber, Steel Fiber, Polyvinyl Alcohol Fiber) to allow for a more focused discussion of the properties and benefits of each type.</p> <p>Mechanical Properties of Fiber-Reinforced Composites: Create subsections for key mechanical properties (e.g., Crack Resistance, Tensile Strength, Durability, and Rheological Properties). This would make it easier for readers to navigate and find specific information.</p> <p>Applications and Future Directions: Consider adding a final section discussing current and potential future applications of these materials in construction. This would help conclude the manuscript with practical and forward-looking insights.</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>The manuscript is scientifically robust and technically sound because it presents a comprehensive review of fiber-reinforced cement-based composites, supported by relevant studies and citations. It thoroughly explains the mechanical improvements brought by various fibers, such as polypropylene, steel, and PVA, and their specific effects on properties like crack resistance, tensile strength, and durability. The discussion is rooted in established scientific principles of material science, including rheological properties, fiber dispersion, and the impact of microstructure modifications on performance. Additionally, the inclusion of detailed experimental findings from multiple sources enhances the technical validity of the conclusions drawn.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p>	<p>The references in the manuscript appear to be sufficient in number, but the recency of the sources is a key factor that can be improved. Some of the references seem to be dated, and updating them with more recent studies from the last 5-10 years would enhance the scientific relevance of the manuscript.</p>	

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:	Fiber-reinforced cement-based composites is a rapidly evolving field, so it's crucial to include recent advancements and findings.	
<p><u>Minor REVISION</u> comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<ol style="list-style-type: none"> 1. Some sentences are complex and may confuse readers. Breaking them into shorter, more concise sentences would improve clarity. 2. Example: "The tensile properties and crack resistance of cement-based composite materials are relatively weak, which leads to the overall structural performance of the project is low" could be rewritten as "Cement-based composite materials have relatively weak tensile properties and crack resistance, leading to reduced overall structural performance." 3. Ensure consistent use of technical terms. For example, "crack resistance" and "tensile strength" should be uniformly used throughout without switching between similar terms. 4. The tone of the article could be made more formal in certain sections, particularly in how problems are stated or conclusions are drawn. Avoid colloquial phrases and ensure a neutral, objective tone throughout. 5. A thorough proofreading for minor grammatical errors, such as verb tense agreement and punctuation, is recommended to align with scholarly communication standards. 	
<p><u>Optional/General</u> comments</p>	<p>The manuscript provides a thorough exploration of cement-based composites, focusing on the limitations of conventional materials and the significant improvements achieved through fibre reinforcement, particularly with steel, polypropylene, and other fibres. The technical depth and discussion of various fibre types, their impact on mechanical properties, and their application in construction are well-researched and relevant to current industry needs. Additionally, the attention to durability, crack resistance, and the economic considerations of fibre use is comprehensive.</p> <p>However, the manuscript could benefit from improvements in structure, organization, and language clarity. Introducing clearer subsections for different fibre types, updating references to include more recent research, and refining the language for better scholarly communication would enhance its readability and impact. Despite these minor issues, the paper is scientifically robust, technically sound, and provides valuable insights into the development and future of fibre-reinforced cement-based composites.</p> <p>In conclusion, with some revisions to improve readability, the paper is a strong contribution to the field of materials science and construction technology. It addresses important challenges in the construction industry and presents viable solutions with fibre-reinforced composites, offering promising prospects for future applications.</p>	

PART 2:

	Reviewer's comment	Author's comment (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)
<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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