## Review Form 3

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| Journal Name: | **Journal of Engineering Research and Reports** |
| Manuscript Number: | **Ms_JERR_127483** |
| Title of the Manuscript: | **Flexural Behavior of Recycled Aggregate Concrete Beam Strengthened with Steel Fiber** |
| Type of the Article | **Article** |

**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)* |
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| **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.** | This manuscript contributes valuable insights into the use of recycled stone aggregates in concrete, addressing a critical issue of resource scarcity and environmental sustainability. By investigating the impact of steel fibers on the flexural behavior of recycled aggregate concrete, the study provides practical solutions for enhancing the structural performance of concrete made from demolished materials. The findings on the optimal steel fiber dosage to improve strength and flexibility in recycled aggregate concrete offer a promising avenue for the development of more sustainable construction materials. This research has significant implications for advancing concrete technologies, particularly in terms of reducing waste and supporting the circular economy in the construction industry. | |
| **Is the title of the article suitable?**<br>**(If not please suggest an alternative title)** | **NO**<br>**Flexural Behaviour of Recycled Aggregate Concrete Beam with varying dosage of Steel Fiber** | |
| **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.** | **YES** | |
| **Are subsections and structure of the manuscript appropriate?** | **YES** | |
| **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.** | **The optimal volume fraction of steel fiber for improving flexural behavior is found to be 1.35%. The compressive strength of the recycled stone aggregate concrete at 7 and 28 days would be based on the mix design, which aimed for a target strength of 30 MPa. First Cracking Load: The first cracking load of the beam with 1.35% steel fiber increased by 11.60% compared to the reference beam (with 0% fiber content).**<br>**Ultimate Load: The ultimate load-bearing capacity of the beam with 1.35% steel fiber increased by 14% compared to the reference beam (with 0% fiber content). The degree of diagonal tension cracking in beams strengthened with steel fiber was less severe than in the reference beam without fiber. This indicates improved structural integrity and crack resistance in the fiber-reinforced recycled aggregate concrete beams. These outcomes suggest that incorporating 1.35% steel fiber with 100% recycled stone aggregate can significantly enhance the flexural performance of concrete beams, making them more suitable for structural applications.** | |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**<br>**-** | **yes** | |

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| Minor REVISION comments<br><br>**Is the language/English quality of the article suitable for scholarly communications?** | yes | |
| **Optional/General** comments | 1. Include the properties of Nano CaCO3<br>2. strengthened beam (B2). No strengthening work is done in the manuscript.<br>3. The flexural strength of samples are not mentioned in manuscript. | |

**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)* |
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| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* | |

**Reviewer Details:**

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|---|---|
| Name: | **Pranoy Roy** |
| Department, University & Country | **Dr. B.C. Roy Engineering College, India** |