**SDI Review Form 1.6**

| Journal Name: | Journal of Engineering Research and Reports |
|---|---|
| Manuscript Number: | **Ms_JERR_49006** |
| Title of the Manuscript: | **Structural Shear behaviour of Composite Box beams using advanced innovated materials** |
| Type of the Article | **Original Research Article** |

**General guideline for Peer Review process:**

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.
To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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

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**PART 1: Review Comments**

| | 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)* |
|---|---|---|
| **Compulsory** REVISION comments | 1- In the introduction a brief overview of the presented research must be included and, moreover, it should well positioned in the framework of the discussed results available in the literature, including the main differences and advancement of the knowledge.<br>2- The authors are needed to review the writing of this paper. There are several typos and statements out of place in the paper. It means that the writing is shabby and careless. The authors should thoroughly edit this paper to improve quality.<br>3- Line 20, what is the "A1" mean?<br>4- All dimension details in Figures (1, 2, ....) must be cleared, The dimensions are not appear well.<br>5- Table 1, please make the text as normal, not bold.<br>6- Figure 3: Where is the distance betwwen loads?<br>7- Did the authors measure the strains in stirrups? If so, where are the locations of Strains? Should be marked exactly<br>8- The post-cracking flexural stiffness (Ku) means the initial tangent stiffness of the curves or the secant stiffness corresponding to the peak load. Did the authors calculate it, It should be clarified that how $k_u$ was determined.<br>**9-** Please define "effective flexural depth and effective shear depth which used in your analysis" in the text.<br>10- Table 4, please list the shear contribution/strength of each specimen in Table 4.<br>11- Why not fabricate a plain concrete beam for comparison with tested beams?<br>12- The authors should conduct the tensile test of reinforcing bars according to testing standards (i.e., ASTM standard). "The guaranteed properties of these bars, as reported by the manufacturer" is normally the lower bond of the material properties.<br>13- Testing standard for the concrete cylinders? Why not use 150*300 cylinders which are more commonly used in the literature?.<br>14- Please explain "each shear span" which is not so clear in the text?.<br>15- Locations of these LVDTs? Please show them in Fig. 3 with distances.<br>16- What is the shear strength of the concrete beam if the beam is not reinforced? Please indicate in the text as well as in Figure 6 to give readers a clear understanding of the contribution of the reinforcements.<br>17- Why not also measure the shear deformation of the beam? What is the ratio between the deflection caused by shear and by bending? | 1- A1 is **Al-Sulaimani     name one refrances authors**<br>2- All dimensions are noted in figure 1 but figure 2 represent a sample for kinds of ferrecement used in experiments.<br>3- Distance between two point load is 300 mm.<br>4- We didn't measure any strain.<br>5- We didn't calculate ku.<br>6- The effective depth of the beams was d<br>Effective depth =total depth – concrete cover = 200-50= 150 mm<br><br>7- Shear span to depth ratio = 750/150= 5<br>8- Table 4, please list the shear contribution/strength of each specimen in Table 4.<br>9- NO plain concrete specimen applied because the main am is to study the effect of using ferrecement composite in load carrying capacity and shear capacity.<br>10- The tensile test of reinforcing bars according properties of these bars, as reported by the manufacturer" is 360 Mpa for main bars and 240MPa for stirrups.<br>11- The cylinder dimensions is standerd in our labs.<br>12- ductile shear failure is not discussed but its can be calculating as the ratio between the shear load at 80% of max load to the max. shear load<br>13- its clear that the shear ductility will enhanced due to the enhanced in ultimate capacity of shear and failure load. |
| **Minor** REVISION comments | 1- In Abstract Section, line 9: Please replace" the paper opens…." To be " The paper presents…..).<br>2- In Abstract Section: Please add "and" after "stirrups.<br>3- Line 31: please replace " was done.." to " was conducted…"<br>4- Why not fabricate a plain concrete circular beam for comparison with these five beams<br>5- Any details on the testing of steel bars to obtain their properties? Testing standard? | |
| **Optional/General** comments | 1- Please explain how to define and calculate the flexural stiffness of these beams using equations.<br>2- Please define what is "ductile shear failure"? Please also explain "ductile shear failure" using Figure 6. What is the clear characteristic of "ductile shear failure".<br>3- If possible, please include more in-depth analysis for the shear failure mechanism for the beam (e.g., in your FE analysis)… | |

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