Review of: "Shear performance of polypropylene fiber reinforced high-strength self-compacting concrete beams"

Arijit Banerji[1]

1 Dr. B.C. Roy Engineering College

Potential competing interests: No potential competing interests to declare.

The writing style of the manuscript needs enhancement, especially in tackling significant technical issues that impact the feasibility of all experiments. This study discusses the outcomes related to the shear behavior of high-strength self-compacting concrete beams reinforced with polypropylene fibers. Nonetheless, it lacks adequate elaboration on the pre-experimental procedures, such as the design phase and adherence to standards, which hampers readers' comprehension of the methodology.

Upon review, I believe the paper could be accepted for publication with certain revisions. Firstly, in the Abstract, the inclusion of numerical data regarding results, such as percentage increases or decreases, would enhance clarity. Additionally, the Introduction should exclude references to steel fibers before discussing the development of other fiber materials. Moreover, citing additional references to support claims about the improvement of tensile strength by polypropylene would strengthen the introduction.

Figure 1 needs to unify the unit of concrete compressive strength to "MPa" throughout the manuscript. Furthermore, each figure or table in the study should be commented on to elucidate its significance. Descriptions of beam specimen lengths should be consistent, and Figure 2 requires dimensions for cross-sections and a correction to the text regarding bottom tensile reinforcement.

Table 3 needs clarification on the meaning of "Dm/DM," and a nomenclature section should be added to the manuscript. Figures 4, 6, and 10 require adjustments to axes for consistency. Additional details are needed on the type of Portland cement and its properties, unit weights of materials, properties of silica fume, mixing time, fiber dimensions, loading rate, curing conditions, test standards, and explanations of abbreviations.

Finally, the "Results and Discussion" and "Conclusion and Recommendations" sections should be separated, with comprehensive interpretation of results and discussion supported by literature. Consideration of the cost implications of polypropylene fiber inclusion and a cost analysis of concrete would enhance the study's relevance to engineering applications.

In the References, DOI and publication years should be included where possible. References No. 1 & 7 should have author names preceding the title, and Reference No. 10 requires a title.