

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

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Potential competing interests: No potential competing interests to declare.

In this paper, the authors conducted an experimental investigation of the shear behavior of polypropylene (PP) fiber-reinforced self-compacting concrete (SCC) beams. Four proportions of PP fibers were used in the concrete mixtures, including 0, 0.1, 0.2, and 0.3 percent of the cementitious materials' weight.

First of all, the research question is not clear. Are there any particular hypotheses that the authors seek to verify? These hypotheses should be framed based on an extensive literature review and thoroughly reflected in the experimental program. The literature review made by the authors concentrated on the shear strength of steel fiber-reinforced concrete beams, whereas attention should be given to previous studies on the shear performance of PP fiber-reinforced concrete beams. Moreover, the authors' statement that "study on self-compacting concrete using polypropylene is still rare" seemed inaccurate, as many studies in the literature have been conducted on this topic. The references cited by the authors are limited and rather outdated.

In terms of the experimental program, the authors adopted two SCC mixtures with slightly different compressive strengths (80 and 90 MPa) and varying PP fiber contents (0%, 0.1%, 0.2%, and 0.3% by weight). It is not clear what aspects of shear performance the authors seek to examine from these varying parameters. The merit of the current study seems marginal to draw conclusions only on the improved shear performance from using higher concrete strength and more PP fiber contents. The test setup adopted by the authors also raised another question. Since the main objective was to examine the shear performance, it is therefore not clear why the authors did not use a shorter span for the beams to fail by shear. Did the beams fail by flexure or by shear? Another confusing term used by the authors is the "volume percentages of polypropylene fibers.....percent of the cementitious materials' weight". Is it percent by volume or by weight?

Based on the above review, the manuscript in its present form is not suitable for publication as a research article in Qeios.