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

Fangliang Guo[1]

1 Chongqing University

Potential competing interests: No potential competing interests to declare.

The authors first produced a kind of self-compacting polypropylene fiber concrete (PFSCC) with reasonable passing, filling, and flow abilities and segregation resistance. Secondly, the effect of adding polypropylene fiber on the shear strength of self-compacting reinforced concrete beams is discussed. The test results show that polypropylene fiber has almost no adverse effect on fresh properties, and the effect can be reduced by adding a plasticizer. Moreover, the addition of polypropylene fiber improves the tensile properties of hardened concrete without affecting the compressive properties. The test results show that the fracture shear stress and shear strength of polypropylene fiber can be increased under certain volume fractions.

Question 1: 'However, steel fibers have disadvantages such as being easily corroded, higher weight, easily damaged mixer, magnetic interference, and higher price [11]. Therefore, another fiber material was developed and used in concrete such as steel fibers…' on the second page of the passage. The former part has mentioned the various shortcomings of steel fibers, and the latter part says that because of the shortcomings of steel fibers, steel fibers, glass fibers, carbon fibers, and other fibers have been developed and used in concrete. Is the cause and effect not clear here?

Question 2: The corresponding sizes of cubic specimens and cylindrical specimens are not marked in Table 2. There does not seem to be any description or explanation of Figure 1. Figure 2 does not seem to indicate the width and thickness of the sample. In Figures 4 and 5, the marking of horizontal and vertical coordinates should keep the same format and position as far as possible.

Question 3: On page 7, 'Several line charts for comparison of strain vs. load are presented, and curves for different amounts of fibers and specified compressive strength of concrete are compared. 'The numbers of the corresponding graphs should be specified.

Question 4: Figures 9 and 10 should indicate the corresponding fiber content of each picture. In this paper, a variety of properties of polypropylene fiber concrete with 0.1-0.3% content have been measured, and the results show that 0.3% content has the best comprehensive performance, but whether a higher content will have better/worse test results is unknown.

Question 5: Some references are not dated or page numbered, and the format is not uniform.