

# **Shear Capacity of High-Strength Fiber Reinforced Concrete Beam-Column Joints**

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## Abstract

This work examines the work of 13 high-strength concrete (HSC) beam column joints (BCJ)-with and without steel fibers. Several shear design methods (with modification for fiber content, where applicable) were found to be conservative within a range of the following variables: 1) concrete compressive strength, 2) type and volume fraction of steel fibers, 3) content of hoops in the joint, and 4) column axial load. The coefficient of variation (COV) of the ratio of test strength to design strength ( $V_{TEST} / V_{rDES}$ ) was found to be appreciably low for two of the five existing safe design methods. A conservative design method, which lowers the COV even further to a value of 7.8 percent, is proposed for HSC joints, with and without steel fiber reinforcement.