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PULL-OUT AND SHEAR STRENGTH EQUATIONS FOR HEADED STUDS CONSIDERING EDGE DISTANCE

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Studs are often used as shear connectors or anchors between concrete and steel members at various composite structures. As the studs are welded in a finite range of the steel members and each stud generally has different distance from the edge of structural concrete, it can be expected that they do not show the same pull-out and shear strength. In this paper, therefore, the test data of previous investigations including new data obtained by authors and existing formulae for pull-out and shear strength of the stud are reevaluated, and the strength equations were revised in the case of independent of the edge distance. Then for the studs near the concrete edge, new influence factors were found and composed into the revised equations as coefficients.

Key Words: stud, shear connector, anchor, ultimate capacity, hybrid structure

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