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Study on Behaviour of CFT Replacing Plate Stiffeners with Shear Studs

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Abstract: *In this paper, we study about the behavior of CFT. The CFT are very much effective in the load carrying. As the modulus of elasticity of steel is more, when compared to the concrete, and when both act as one known as Composite Section. In this study we will be covering CFT under three different conditions, firstly CFT having axial and shear force in fin plate that is welded to the Column Plate. Second will be CFT having axial and shear force to the fin plate also having Shear studs at the centre of the Column plate. The third condition will be the longitudinal plate stiffeners welded to the column plate having axial and shear force to the fin plate welded to it. The stress and displacement developed in the column plate for the following above given three conditions are modeled and analyzed using the Software called Solid works. The results for three conditions of the CFT are compared. When the results compared among the three conditions, it clearly comes to know that the CFT having no stiffeners is least effective in load carrying, as the stress and displacement developed are very high. CFT having shear studs welded to the column plate have a intermediate stress and displacement. CFT having longitudinal stiffeners have very least stress and displacement. Hence, it is proved that the CFT having longitudinal stiffener plate welded to its inner face are more effective and impressive in carrying more loads with less Stress and displacement induced in it.*

Keywords: CFT, Stiffeners, Shear Studs, Longitudinal Stiffeners, Stress, Displacement

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