

Numerical Analysis on Performance Of Z, Hat and Channel Shaped CFS Sections with and without Web Perforations

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ABSTRACT

Although hot rolled steel sections have been regularly employed in the construction sector for over a decade, they are not favored as a concrete substitute due to their substantial weight. Cold form steels, which are made by pressing and rolling thin gauge steel sheets at temperatures close to room temperature, are lightweight and preferred over hot rolled steel because of their high strength-to-weight ratio and post-buckling strength. The goal of this review is to look at the behavior of cold formed steel members with and without holes under similar loading circumstances in a variety of cross sections. Three various types of sections were used in this study, including C, Z, and Hat shaped sections with varying cross-sectional areas, and the selected sections are asymmetric. The selected specimens were examined analytically with ANSYS software, and the findings were compared for sections with and without web perforations to determine how well the three performed under static loading conditions.

Keywords: *CFS, ANSYS Workbench, Perforations, FEM, Asymmetric.*