

عنوان مقاله:

Analytical investigation of local buckling behavior of flanged-cruciform stub columns

محل انتشار:

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خلاصه مقاله:

In this study, the local buckling behavior of stub columns with flanged cruciform section (FCSs), being considered as an appropriate alternative to use in orthogonal moment-resisting frames due to their symmetrical shape around principal axes as well as ease of fabrication is investigated. A simplified residual stress distribution model for welded FCSs is proposed and implemented in the experimentally verified, nonlinear finite element models and a wide range of web and flange thicknesses are assigned to evaluate the current AISC slenderness limits, employed for I-shaped sections in members subjected to pure compression. The results indicate that although I-shaped section slender/non-slender limits are safely applicable for FCSs members, the non-slender limit for web of FCSs members in pure compression can be safely increased by 15 percent.

کلمات کلیدی:

Flanged cruciform, Column, Local buckling, Residual stresses, Finite element analysis

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