

## Performance of Stiffened Slender Built up Steel I-Columns

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**Abstract :** The present work illustrates a parametric study for the effect of stiffeners on the performance of slender built up steel I-columns. To achieve the desired analysis, finite element technique is used to develop nonlinear three-dimensional models representing the investigated columns. The finite element program (ANSYS 13.0) is used as a calculation tool for the necessary nonlinear analysis. A validation of the obtained numerical results is achieved. The considered parameters in the study are the column slenderness ratio and the horizontal stiffener's dimensions as well as the number of stiffeners. The dimensions of the stiffeners considered in the analysis are the stiffener width and the stiffener thickness. Numerical results signify a considerable effect of stiffeners on the performance and failure load of slender built up steel I-columns.

**Keywords :** columns, local buckling, slender, stiffener, thin walled section

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