## A Simple Design Procedure for Calculating the Column Ultimate Load of Steel Frame Structures

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**Abstract :** Calculating the ultimate load of a column in a sway framed structure involves, in the currently used design method, the calculation of the column effective length and utilizing the interaction formulas or tables. Therefore, no allowance is usually made for the effects of the presence of semi rigid connections or the presence of infill panels. In this paper, a new and simple design procedure is recommend to calculate the ultimate load of a framed Column allowing for the presence of rotational end restraints, semi rigid connections, the column end moments resulted from the applied vertical and horizontal loading and infill panels in real steel structure. In order to verify the accuracy of the recommended method to predict good and safe estimations of framed column ultimate loads, several examples have been solved utilizing the recommended procedure, and the results were compared to those obtained using a second order computer program, and good correlation had been obtained. Therefore, the accuracy of the proposed method to predict the Behaviour of practical steel columns in framed structures has been verified. **Keywords :** column ultimate load, semi rigid connections, steel column, infill panel, steel structure

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