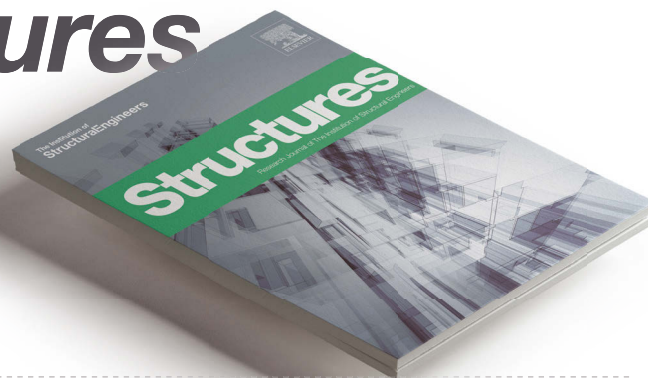


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Spotlight on *Structures*



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Volume 35 of *Structures* (January 2022) is now available to read at www.sciencedirect.com/journal/structures/vol/35.

Editor-in-Chief, Leroy Gardner, has selected a paper on the flexural buckling resistance of high-strength aluminium alloy H-columns as his 'Featured Article' from this issue. The article will be available free of charge for six months.

Editor-in-Chief's Featured Article

Experimental investigation and design method of the flexural buckling resistance of high-strength aluminum alloy H-columns

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High strength aluminum alloy members can be used if the required cross-sections are larger than those obtainable by extrusion. The application range of the current design codes for aluminum structures is limited for normal-strength material and whether high-strength members can be designed with the existed buckling curves is examined. Fourteen H-section columns made from 7075-T6 were tested under axial compression. The effects of the different material properties and imperfections on the flexural buckling behavior of normal- and high-strength columns were analyzed numerically. The column curves in European,

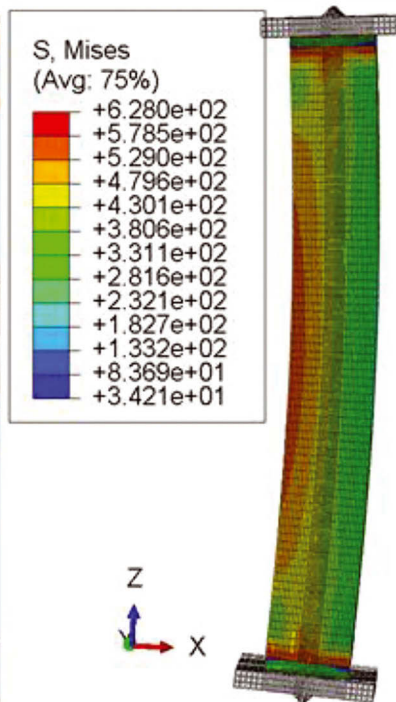
Chinese and American specifications can predict flexural buckling resistance of such columns safely with an average underestimation of 13%, 12% and 8%, respectively. Eighty-one column buckling tests available in the literature performed on extruded sections made of aluminum alloy with the yield stress between 388

MPa and 557 MPa were collected and analyzed. Finally, a new flexural buckling curve was suggested for the estimation of flexural-buckling resistance of high-strength extruded members.

→ Read the full paper at <https://doi.org/10.1016/j.istruc.2021.11.013>



(a) Test



(b) FEM



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