World Academy of Science, Engineering and Technology
International Journal of Civil and Environmental Engineering
Vol:9, No:02, 2015

Direct Strength Method Approach for Indian Cold Formed Steel Sections with and Without Perforation for Compression Member

Authors : K. Raghu, Altafhusen P. Pinjar

Abstract : Cold-formed steel section are extensively used in industry and many other non-industry constructions worldwide, it is relatively a new concept in India. Cold-formed steel sections have been developed as more economical building solutions to the alternative heavier hot-rolled sections in the commercial and residential markets. Cold-formed steel (CFS) structural members are commonly manufactured with perforations to accommodate plumbing, electrical, and heating conduits in the walls and ceilings of buildings. Current design methods available to engineers for predicting the strength of CFS members with perforations are prescriptive and limited to specific perforation locations, spacing, and sizes. The Direct Strength Method (DSM), a relatively new design method for CFS members validated for members with and without perforations, predicts the ultimate strength of general CFS members with the elastic buckling properties of the member cross section. The design compression strength and flexural strength of Indian (IS 811-1987) standard sections is calculated as per North American Specification (AISI-S100 2007) and software CUFSM 4.05.

Keywords : direct strength, cold formed, perforations, CUFSM
Conference Title : ICCESE 2015 : International Conference on Civil, Environmental and Structural Engineering
Conference Location : Kuala Lumpur, Malaysia
Conference Dates : February 12-13, 2015