

Determination of Weld Seam Thickness in Welded Connection Subjected to Local Buckling Effects

Authors : Tugrul Tulunay, Iyas Devran Celik

Abstract : When the materials used in structural steel industry are evaluated, box beam profiles are considerably preferred. As a result of the cross-sectional properties that these profiles possess, the connection of these profiles to each other and to profiles having different types of cross sections is becoming viable by means of additional measures. An important point to note in such combinations is continuous transfer of internal forces from element to element. At the beginning to ensure this continuity, header plate is needed to use. The connection of the plates to the elements works mainly through welds. In this study, it is aimed to determine the ideal welding thickness in box beam under bending effect and the joints exposed to local buckles that will form in the column. The connection with box column and box beam designed in this context was made by means of corner and circular filler welds. Corner welds of different thickness and analysis by types with different lengths depending on plate dimensions in numerical models were made with the help of ANSYS Workbench program and examined behaviours.

Keywords : welding thickness, box beam-column joints, design of steel structures, calculation and construction principles 2016, welded joints under local buckling

Conference Title : ICCEAM 2018 : International Conference on Civil Engineering and Applied Mechanics

Conference Location : London, United Kingdom

Conference Dates : March 15-16, 2018