Lapped Gussets Joints in Compression

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Abstract : Final results of an extensive laboratory research program on "lapped gusset joints in compression" are presented. The investigation was carried out at the Heavy structures laboratory at the University of the Witwatersrand in Johannesburg, South Africa. A proposed, relatively easy to use analytical equation was found to be reasonably adequate in determining the global compressive capacity of lapped gussets joints under compressive load. A wide range of lapped mild steel plates of varying slenderness, welded on 219*10 and 127*6 Mild steel circular hollow sections of 1m length were tested in compression and the formula was validated with experimental results. The investigation show that the connection's capacity is controlled by flexure due to the eccentricity between the plates that are connected side to side.