

# Structural Behaviour of Trapezoidal Web Profiled Steel Beam Section using Partial Strength Connection

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## ABSTRACT

*Connections are usually designed as pinned which associated with simple construction or rigid which is associated with continuous construction. However, the actual behaviour falls between these two extreme cases. The use of partial strength or semi-rigid connections has been encouraged by EC3 code and studies on hot-rolled steel sections on semi-continuous construction for braced steel frames have proven that substantial savings in steel weight and the overall construction cost. The objective of this paper is to present the performance of full scale testing of sub-assembly steel beam and isolated beam-to-column with partial strength connections for Trapezoid Web Profiled (TWP) steel sections. The TWP steel section is a built up section where the flange is of S355 steel section and the corrugated web of S275 steel section. Two full scales testing with beam set-up as sub-assembly and beam-to-column connection have been carried out for flush and extended end-plate connections as partial strength connections. It was concluded that the use of extended end-plate connection has contributed to significant reduction to the deflection and significant increase to the moment resistance of the beam than flush end-plate connection.*

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