

The Experimental Study of Cold-Formed Steel Truss Connections Capacity: Screw and Adhesive Connection

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Abstract : A series of connection tests that were composed of Cold-Formed Steel (CFS) sections were made to investigate the capacity of connections in a roof truss frame. The connection is controlled by using the two-different type of connection i.e. screws connection and adhesive. The variation of screws is also added applying 1 screw, 2 screws, and 3 screws. On the other hand, the percentage of adhesively material is increased by the total area of screws connection which is 50%, 75%, and 100%. Behaviors illustrated by each connection are examined, and the design capacities projected from the current CFS design codes are appealed to the experimental results of the connections. This research analyses the principal factors assisting in the ductile response of the CFS truss frame connection measured to propose recommendations for connection design, and novelty so that the connection respond plastically with a significant capacity for no brittle failure. Furthermore, the comparison connection was considered for the analysis of the connection capacity, which was estimated from the specimen's maximum load capacity and the load-deformation behavior.

Keywords : adhesive, bolts, capacity, cold-formed steel, connections, truss

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