

Axial and flexural performance of adhesive connection on cold-formed steel structures

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Abstrak

In this paper, a research of new connection method on the cold-formed steel in civil engineering structures is presented. The study focuses on the axial and flexural performance on cold-formed steel structures. A cold-formed steel with screw, adhesive and combination connections that have been loaded in tension and flexure until rupture. A comparison strength in tensile and flexure between the joint types and screw joint on cold-formed steel were investigated. The use of adhesive as the joint (connection) be able to increase the structure capacity significantly. Combination joint between screw and adhesive on cold-formed steel structure could prevent

premature collapse of the structure. Adhesive in the combination joints also could minimize the bearing failure of screw joint. It was caused by the rigidity cold-formed steel structure that has increased throughout the adhesive joint. The effect of local buckling could be minimized with increasing structural rigidity. The adhesively bonded joint strength is based on the type of adhesive. The joint failure was began at the end of an adhesively bonded area then it propagated to the middle until it was fully degraded.