

Cold formed sections have larger advantages over hot-rolled steel sections. However, the performance of their connections is still in need of further research. In this study, both experimental and numerical studies are performed to assess the behavior of portal frame corner connections. Two experimental tests were conducted to obtain information on displacements and stresses, then used to validate the numerical model developed using finite element program. Cold-formed steel sigma sections were used for the beams and columns.

1) Experimental Setups



Fig 1.1: S1 Specimen Setup



Fig 1.2: S2 Specimen Setup

2) Failure of Specimens

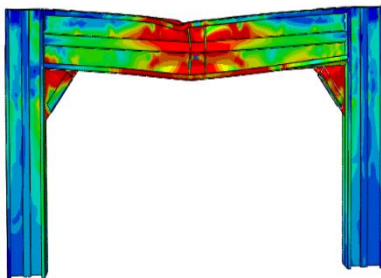


Fig 1.3: S1 Failure

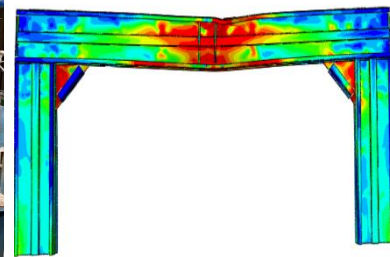
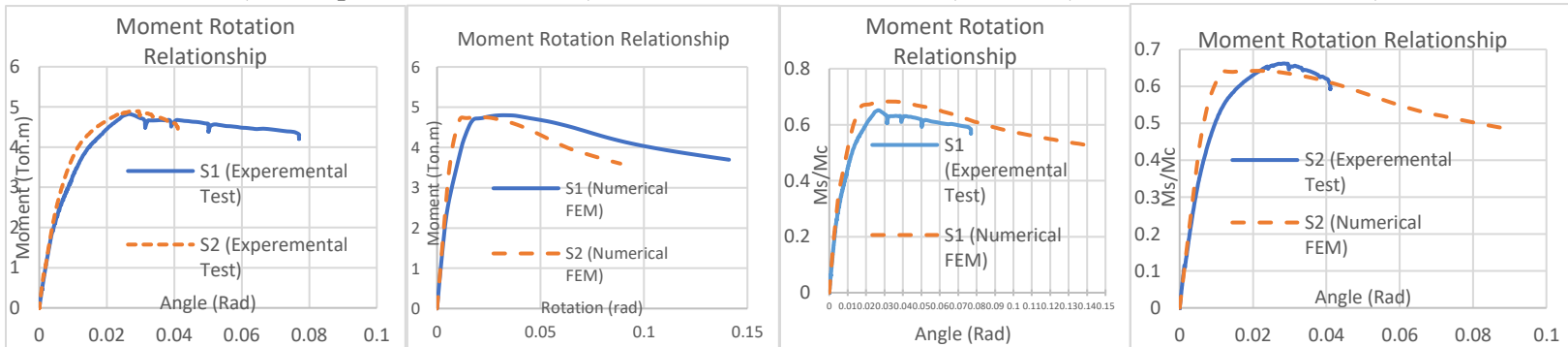


Fig 1.4: S2 Failure

3) Comparison between S1 (Extended Column Connection) and S2 (Rested Beam Connection)



Mc: Cross-Section Capacity Ms: Specimen Capacity