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Load bearing capacity of light steel wall panels with various stud configuration

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The strength of light steel wall panel depends on stud slenderness and distance between stud. This paper presents details of an experimental study on the load-bearing capacity of light steel wall panels with different configuration of studs, namely single lipped C stud, double back-to-back lipped C stud, and double box lipped C stud. Nine full scale load tests were carried out on wall panels to investigate their performance and to establish a comprehensive database of information. Dry wall boards were used as the sheathing material and providing stability of frame. The loading was primarily distributed over the wall panel through spreader beam to avoid local buckling of wall stud under direct compressive loading of wall panel. Failure modes, compression resistance of wall and wall displacements were observed and then compared to theoretical predictions using current code of practice. Based on the failure modes obtained from the tests, a design guideline is proposed to determine the load-bearing capacity of light steel wall panel.

Biography

Shek Poi Ngian joined Universiti Teknologi Malaysia as Lecturer in the Faculty of Civil Engineering in March 2010. He is currently a Faculty Senior Lecturer as well as the Research Fellow in UTM Construction Research Centre (UTM-CRC). He received his Bachelor of Engineering (Civil) in year 2005 and Doctor of Philosophy (Structure) in year 2009 from Universiti Teknologi Malaysia respectively. He now is a Graduate Member in The Institution of Engineers, Malaysia (IEM), Board of Engineers Malaysia (BEM), and Malaysian Society for Engineering & Technology (mSet) as well. Shek's primary research interests are in the field of steel connection, multi-storey steel frame, light steel framing system, steel and composite structure and load bearing interlocking block system.

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