

Development of a Testing Rig for a Cold Formed-Hot Rolled Steel Hybrid Wall Panel System

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Abstract : The new concept of a cold formed-hot rolled hybrid steel wall panel system is introduced to overcome the deficiency in lateral load resisting capacity of cold-formed steel structures. The hybrid system is composed of a cold-formed steel part laterally connected to hot rolled part. The hot rolled steel part is responsible for carrying the whole lateral load; while the cold formed steel part is only required to transfer the lateral load to the hot rolled part without any local failure. The vertical load is beared by both hot rolled, and cold formed steel part, proportionally. In order to investigate the lateral performance of the proposed system, it should be tested under simultaneous lateral and vertical load. The main concern is to deliver the loads to each part during the test to simulate the real load distribution in the structure. In this paper, a detailed description of the proposed wall panel system and the designed testing rig is provided.

Keywords : cold-formed steel, hybrid system, wall panel system, testing rig design

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