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ABSTRACT**

<p><b>Title of abstract:</b></p>	<p>Static and Cyclic Behaviour of Flush End-plate Joints to Concrete Filled Steel Tubular Columns</p>
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<p><b>Abstract:</b></p>	<p>In this paper, a new design of bolted connection composed of circular or square concrete-filled steel tube columns and H-shaped steel beams using high-strength blind bolts has been considered in order to develop suitable joint design methods. This paper describes the results of a series of experimental programs, which include monotonic tests and cyclic tests of the joints.</p> <p>In order to investigate the static performance and failure modes of these types of connections, a first experimental program was conducted involving four sub-assemblages of cruciform beam-to-column joints subjected to monotonic loading. Moment-rotation relationships of the tested connections were obtained and their performance was evaluated. Moreover, four beam-to-column sub-assemblage specimens are also tested under cyclic loading to investigate the seismic behavior of blind bolted flush endplate joints. The hysteretic performance, failure modes and stiffness degradation of the blind bolted connection is evaluated in detail. The test parameters varied were the column section type and the thickness of the endplate. It is concluded that the proposed blind bolted connection, which behaves in a semi-rigid and partial strength manner according to the EC3 specification, has reasonable strength and stiffness, whilst the rotation capacity of the connection satisfies the ductility requirements for earthquake-resistance in most aseismic regions. The hysteretic loops of the type of composite connections exhibit excellent seismic performance, without obvious degradation of the connection strength and stiffness. This type of joint can be reliably and effectively used in moment-resisting composite frames.</p> <p>Keywords: concrete-filled steel tubes; semi-rigid connection; flush endplate; blind bolt; monotonic; cyclic.</p>