1 CONCEPT OF DESIGN GUIDES 1.1 Background

The ASI was formed in 2002 through the merger of Australian Institute of Steel Construction (AISC) and Steel Institute of Australia (SIA). The former AISC published a design manual giving guidance on the design of structural connections in steelwork (Ref. 2).

ASI is updating Reference 2 by way of the Connection Series including design guides dealing with connection parts and individual connection types. The overall series of Connections publications will be known as the Connections Series.

The former AISC also published a manual containing standardised detailing for simple connections, accompanied by load tables (Ref. 3).

Wherever possible each design guide for individual connection types contains standardised detailing and design capacity tables for the connection type covered by that design guide derived using the design models in that design guide.

The Connection Series is a specialist series devoted to the design of connections in structural steel in accordance with current Australian Standard AS 4100 (Ref. 1), reflecting the current state of knowledge of connection behaviour from test results. In some instances, the test evidence is sparse and in other instances the evidence is contradictory or clouded. Each design guide in the Connection Series has been written by weighing the evidence to provide recommended design procedures based in part on the design procedures used in equivalent manuals and/or published papers.

This Guide is intended to provide a design model for the extended bolted moment end plate to column connection which gives a realistic estimate of connection design capacity and considerable effort has been expended in researching and developing a simple, yet satisfactory design model which can be justified on the basis of the available research and current design practice. It is to be emphasised that for this connection, the design model presented is not the only possible model—merely the most representative of the behaviour of an individual connection in the opinion of the ASI. **It is therefore not intended to suggest that other models may not result in adequate connection capacity and further reference is made to the Disclaimer on page ii of this publication as to the required investigation and verification by a competent professional person or persons in regards to the accuracy, suitability and applicability of the materials provided in this Connections Series.**

This Design Guide is intended to provide a recommended design model for the extended bolted moment end plate connection when used as a beam-to-column rigid connection.

The recommended design model is based extensively on the American Institute of Steel Construction Steel Design Guide 4 '*Extended end-plate moment connections seismic and wind applications*', Second Edition and Design Guide 13 '*Stiffening of wide flange columns at moment connections: Wind and seismic applications*' (Refs 6 and 10 respectively).

The recommended design model also includes material from American Institute of Steel Construction Design Guide 16 *'Flush and extended multiple-row moment end-plate connections', First Edition* (Ref. 18) and References 19 and 20.

Design Guide 12

Bolted end plate to column moment connections

by

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Design Guide 4: Flexible end plate connections
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Design Guide 6: Seated connections
Design Guide 10: Bolted end plate beam splice connections
Design Guide 11: Welded beam to column moment connections

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