7 CALCULATION OF DESIGN ACTIONS

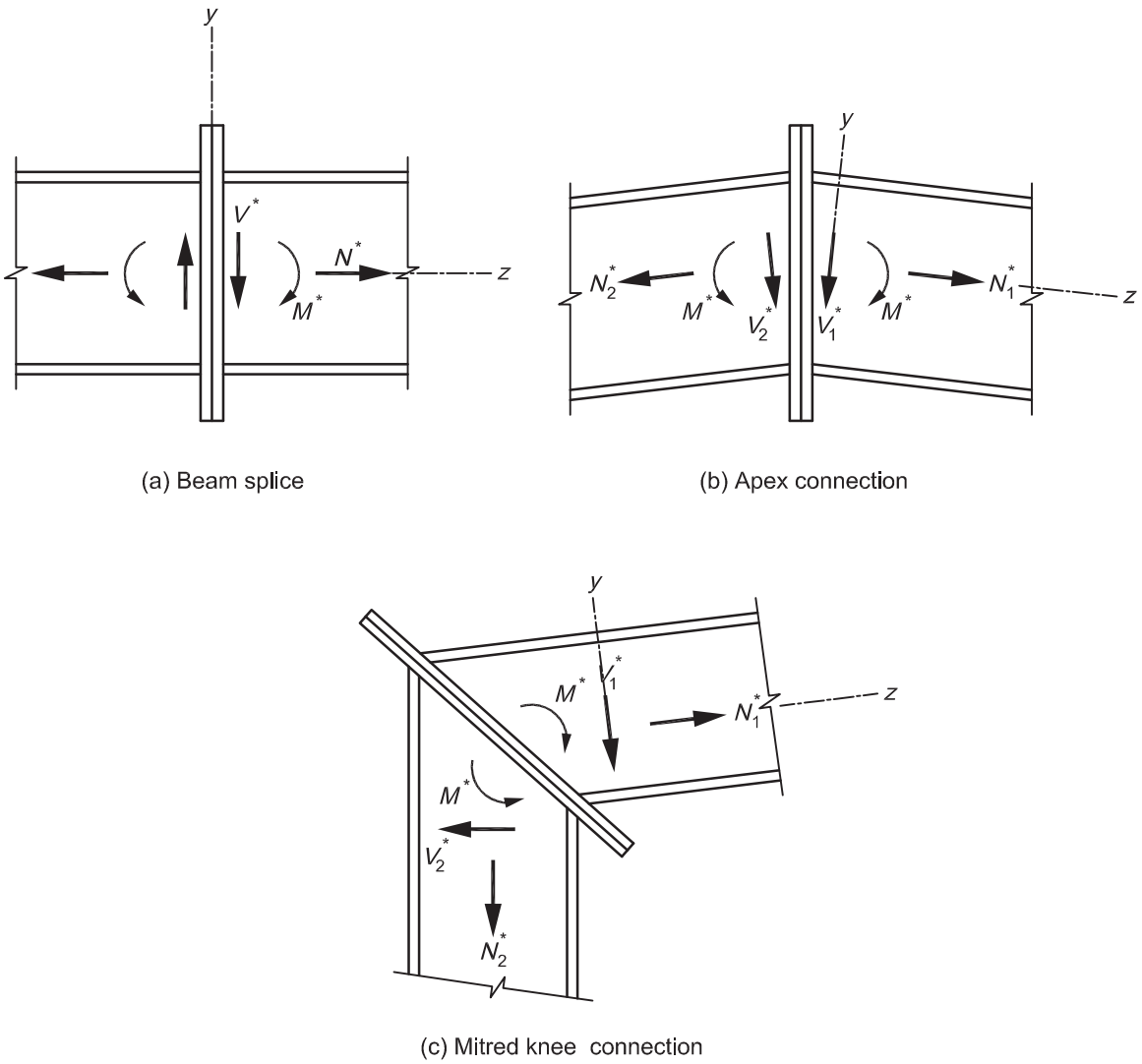

FIGURE 7 DESIGN ACTIONS AT CONNECTION

The design action effects at the connection can be determined from either:

(a) elastic analysis (Clause 4.4 of AS 4100) which could in turn, be either—

(i) a first order elastic analysis with moment amplification (Clause 4.4.2 of AS 4100); or

(ii) a second order elastic analysis (Appendix E of AS 4100)

or

(b) plastic analysis (Clause 4.5 of AS 4100).

Applied actions at a connection are assumed to be those shown in Figure 7 as follows:

- a design bending moment about the section x-axis M^*
- a design shear force parallel to the section y-axis V^*, or V_1^* and V_2^*
- a design axial force parallel to the z-axis N^*, or N_1^* and N_2^*

In the recommended design model, the design moment capacity of the bolt group and the end plate is determined using nominated formulae and these capacities must exceed M^*. The design capacity of the bolts and plate in shear are also evaluated and these must exceed a resultant shear force determined from components of V_1^* and N_1^* or V_2^* .and N_2^* .

DESIGN GUIDE 10

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first edition—2009

AUSTRALIAN STEEL INSTITUTE
(ABN)/ACN (94) 000 973 839

Design Guide 10
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Published by: AUSTRALIAN STEEL INSTITUTE

FIRST EDITION 2009 (LIMIT STATES)

National Library of Australia Cataloguing-in-Publication entry:
Hogan, T.J.
Design Guide 10: Bolted moment end plate beam splice connections

1st ed.
Bibliography.
ISBN 978 1 921476 10 5 (pbk.).
ISBN 978 1 921476 11 2 (pdf.).

1. Steel, Structural—Standards – Australia.
2. Steel, Structural—Specifications – Australia.
3. Joints, (Engineering)—Design and construction.
I. van der Kreek, N.
II. Australian Steel Institute.
III. Title
(Series: Structural steel connection series).

This publication originated as part of
Design of structural connections
First edition 1978
Second edition 1981
Third edition 1988
Fourth edition 1994

Also in this series:
Handbook 1: Design of structural steel connections
Design Guide 1: Bolting in structural steel connections
Design Guide 2: Welding in structural steel connections
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Design Guide 12: Bolted end plate beam to column moment connections
Design Guide 13: Splice connections

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