10 RECOMMENDED DESIGN MODEL—UNSTIFFENED COLUMN

10.1 DESIGN CHECK NO. 3—Local bending of column flange at beam tension flange

Design requirement— $\phi R_{ft} \geq N^*_{ft}$ (N^*_{ft} as defined in Table 1 of Section 7)

where: $\phi = 0.90$

$R_{ft} = 6.25 t_{fc}^2 f_{ycf} c_t$

t_{fc} = thickness of column flange

f_{ycf} = yield stress of column flange

As in Figure 19, c_t = 0.5 where beam flange is less than $10t_{fc}$ from end of column and no transverse stiffener is provided—after Reference 9

= 1.0 otherwise—after Reference 9

Where the above inequality is not satisfied, there are three options:

(a) provide column flange doubler plate as Figure 7(a)—see Section 11, DESIGN CHECK NO. 9;

(b) provide a new flange plate at the beam tension flange whose thickness satisfies this design check, the new flange plate butt welded into column section (as Figure 7(c));

(c) provide a pair of transverse stiffeners welded to column flange as Figures 8(a) and 8(b)—see Section 12, DESIGN CHECK NO. 15.

Since AS 4100 (Ref. 1) does not have a specific provision for this situation, the DESIGN CHECK is based on the AISC (US) provisions (References 7, 9). Background to the provision may be found in Reference 10.

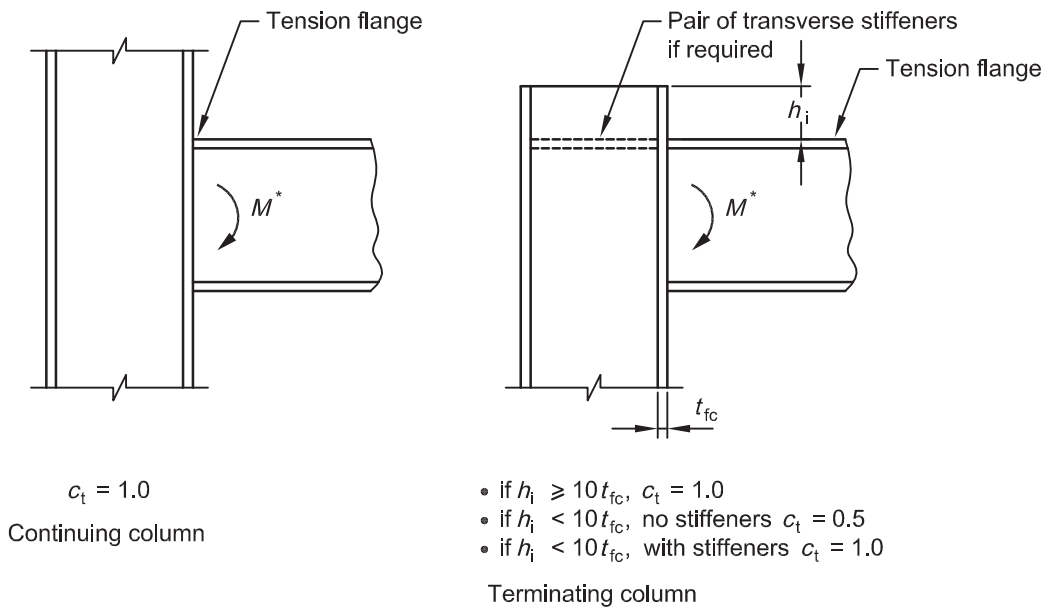

FIGURE 19 APPLICATION OF c_t TERM—LOCAL BENDING AT TENSION FLANGE

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by

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CONTENTS

LIST OF FIGURES

Page

Page

LIST OF TABLES