

9 RECOMMENDED DESIGN MODEL 9.1 DESIGN CHECK NO. 1— Detailing requirements

Detailing requirements (Refer to Figures 12 to 16 for notation)

End plate width $b_t \geq b_f + 20$

Bolt gauge $s_g \leq b_f$
 ≥ 120 (M20 bolts)
 ≥ 140 (M24 bolts)

Bolt pitches $s_{p1}, s_{p2}, s_{p3} \geq 70$ (M20 bolts)
 ≥ 80 (M24 bolts)

Edge distance $a_e \geq 30$ (M20 bolts)
 ≥ 36 (M24 bolts)
 $\leq 2.5d_f$ (d_f = bolt diameter)

Dim. a_f as small as possible but $\geq d_f + L_a \cot \beta$ (angle β and a_f defined in Figure 17)

and $\geq 0.5d_s + L_s \cot \beta$

and $\geq 0.5 \times$ washer dia. + fillet weld leg length

and for impact wrenches ≥ 55 mm (M20 bolts), 65 mm (M24 bolts)

where: $L_a = 2.2d_f + \text{grip}$ (actual bolt length)

d_s = socket diameter = 58 mm M20 bolts, 68 mm M24 bolts

L_s = socket length = 63 mm M20 bolts, 70 mm M24 bolts

NOTE: d_s and L_s may be found in Table 23 of Ref. 12.

Bolt gauge s_g , socket diameter d_s , socket length L_s are all for impact wrenches. Smaller dimensions apply for hand wrenches (see Table 22 of Ref. 12).

Washer diameters :42 mm (M20), 50 mm (M24) (see Table 11 of Ref. 12)

Stiffener (Figure 18) 25 mm landings at each end

30 degree slope

Additional limits, which are recommended for Australian applications based on the range of tested parameters given at Table 1, are nominated in Table 3.

TABLE 3
RECOMMENDED LIMITS ON DETAILING PARAMETERS

Parameter	4,6,8 bolt unstiffened end plate	4 bolt stiffened end plate	8 bolt stiffened end plate
End plate thickness t_t (mm)	16–40	16–36	16–40
End plate width b_t (mm)	125–330	180–330	230–430
Bolt gauge s_g (mm)	80–180	80–170	150–170
Bolt diameter d_f (mm)	M20, M24	M20, M24	M20, M24
Beam size	200UB*–800WB	200UB–700UB	530UB–900WB
Clearance s_{po} (mm)	40–75	40–75	40–75

*6 and 8 bolt arrangements may not fit in 200UB or 250UB beam sections.



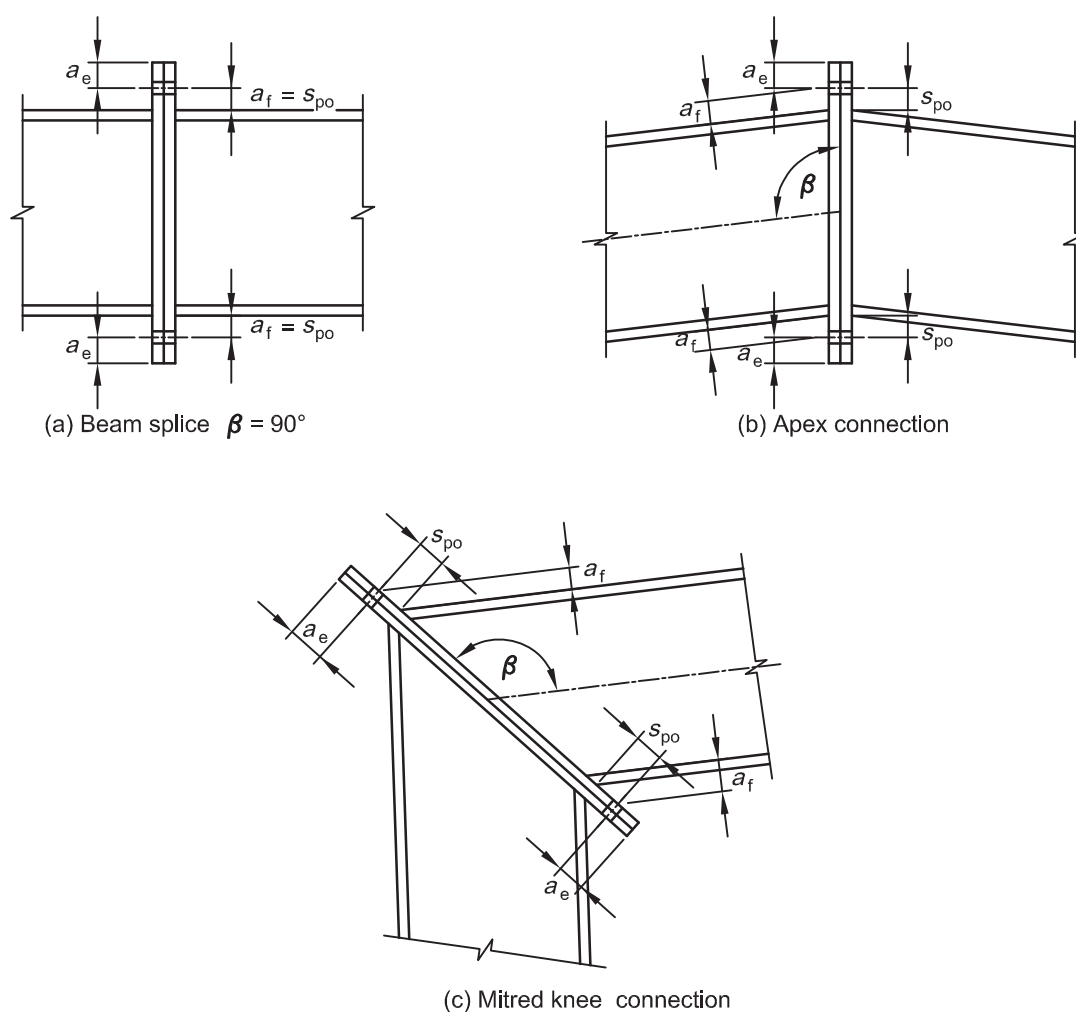


FIGURE 17 CLEARANCE DIMENSIONS a_f , a_e , s_{po}

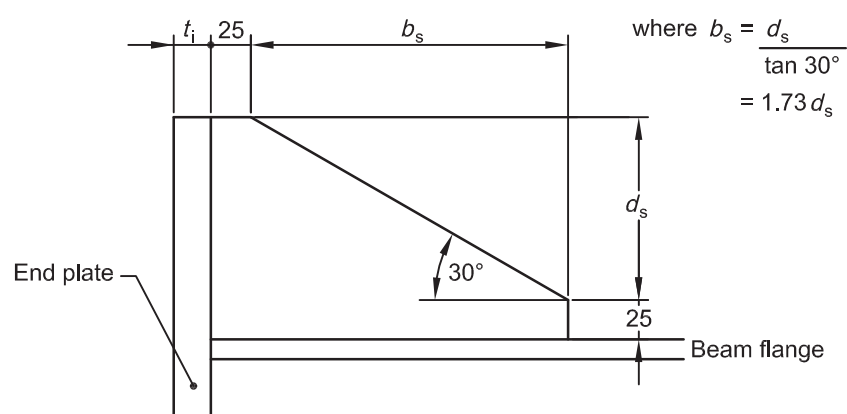


FIGURE 18 END PLATE STIFFENER DETAILING

DESIGN GUIDE 10

Bolted moment end plate beam splice connections

by

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Bolted moment end plate beam splice connections

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