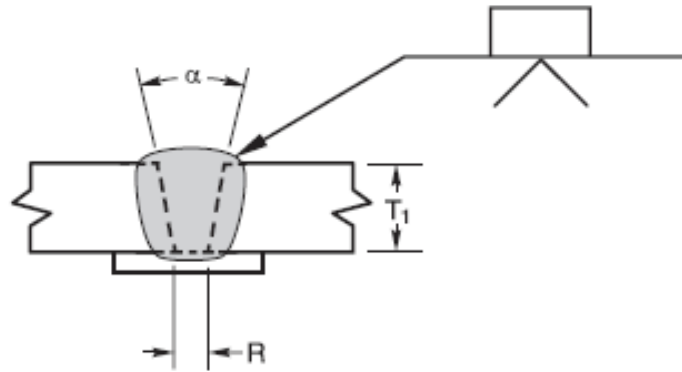


Single-V-groove weld (2)
Butt joint (B)



Tolerances

As Detailed (see 3.13.1)	As Fit-Up (see 3.13.1)
$R = +1/16, -0$	$+1/4, -1/16$
$\alpha = +10^\circ, -0^\circ$	$+10^\circ, -5^\circ$

Welding Process	Joint Designation	Base Metal Thickness (U = unlimited)		Groove Preparation		Allowed Welding Positions	Gas Shielding for FCAW	Notes
		T ₁	T ₂	Root Opening	Groove Angle			
SMAW	B-U2a	U	—	R = 1/4	$\alpha = 45^\circ$	All	—	e, j
				R = 3/8	$\alpha = 30^\circ$	F, V, OH	—	e, j
				R = 1/2	$\alpha = 20^\circ$	F, V, OH	—	e, j
GMAW FCAW	B-U2a-GF	U	—	R = 3/16	$\alpha = 30^\circ$	F, V, OH	Required	a, j
				R = 3/8	$\alpha = 30^\circ$	F, V, OH	Not req.	a, j
				R = 1/4	$\alpha = 45^\circ$	F, V, OH	Not req.	a, j
SAW	B-L2a-S	2 max.	—	R = 1/4	$\alpha = 30^\circ$	F	—	j
SAW	B-U2-S	U	—	R = 5/8	$\alpha = 20^\circ$	F	—	j

Notes for Figures 3.3 and 3.4

- ^a Not prequalified for GMAW-S nor GTAW.
- ^b Joint shall be welded from one side only.
- ^c Cyclic load application places restrictions on the use of this detail for butt joints in the flat position (see 2.18.2).
- ^d Backgouge root to sound metal before welding second side.
- ^e SMAW detailed joints may be used for prequalified GMAW (except GMAW-S) and FCAW.
- ^f Minimum weld size (E) as shown in Table 3.4. S as specified on drawings.
- ^g If fillet welds are used in statically loaded structures to reinforce groove welds in corner and T-joints, these shall be equal to $T_1/4$, but need not exceed $3/8$ in [10 mm]. Groove welds in corner and T-joints of cyclically loaded structures shall be reinforced with fillet welds equal to $T_1/4$, but need not exceed $3/8$ in [10 mm].
- ^h Double-groove welds may have grooves of unequal depth, but the depth of the shallower groove shall be no less than one-fourth of the thickness of the thinner part joined.
- ⁱ Double-groove welds may have grooves of unequal depth, provided these conform to the limitations of Note f. Also the weld size (E) applies individually to each groove.
- ^j The orientation of the two members in the joints may vary from 135° to 180° for butt joints, or 45° to 135° for corner joints, or 45° to 90° for T-joints.
- ^k For corner joints, the outside groove preparation may be in either or both members, provided the basic groove configuration is not changed and adequate edge distance is maintained to support the welding operations without excessive edge melting.
- ^l Weld size (E) shall be based on joints welded flush.
- ^m For flare-V-groove welds and flare-bevel-groove welds to rectangular tubular sections, r shall be as two times the wall thickness.
- ⁿ For flare-V-groove welds to surfaces with different radii r, the smaller r shall be used.