

Aluminum Thickness (inches)	Weld Position ²	Edge Prep. ³	Root Opening (inches)	Preheat (°F) ⁴	Weld Passes	Filler Diameter (inches)	Tungsten Electrode Diameter (inches)	Gas Cup Inside Diameter (inches)	Argon (cfh)	AC (amps)	Arc Travel Speed (ipm)	Approx. Filler Rod Consumption (lb./100 ft)
1/16	F, V, H	A or B	0-1/16	None	1	3/32	1/16-3/32	3/8	20	70-100	8-10	0.5
	O	A or B	0-1/16	None	1	3/32	1/16	3/8	25	60-75	8-10	0.5
3/32	F	A or B	0-3/32	None	1	1/8	3/32-1/8	3/8	20	95-115	8-10	1
	V, H	A or B	0-3/32	None	1	3/32-1/8	3/32	3/8	20	85-110	8-10	1
	O	A or B	0-3/32	None	1	3/32-1/8	3/32-1/8	3/8	25	90-110	8-10	1
1/8	F	A or B	0-1/8	None	1-2	1/8-5/32	1/8	7/16	20	125-150	10-12	2
	V, H	A or B	0-3/32	None	1-2	1/8	1/8	7/16	20	110-140	10	2
	O	A or B	0-3/32	None	1-2	1/8-5/32	1/8	7/16	25	115-140	10-12	2
3/16 4.5	F	D-60°	0-1/8	None	2	5/32-3/16	5/32-3/16	7/16-1/2	25		170-190	10-12
	V	D-60°	0-3/32	None	2	5/32	5/32	7/16	25	160-175	10-12	4.5
	H	D-90°	0-3/32	None	2	5/32	5/32	7/16	25	155-170	10-12	5
	O	D-110°	0-3/32	None	2	5/32	5/32	7/16	30	165-180	10-12	6
1/4	F	D-60°	0-1/8	None	2	3/16	3/16-1/4	1/2	30	220-275	8-10	8
	V	D-60°	0-3/32	None	2	3/16	3/16	1/2	30	200-240	8-10	8
	H	D-90°	0-3/32	None	2-3	5/32-3/16	5/32-3/16	1/2	30	190-225	8-10	9
	O	D-110°	0-3/32	None	2	3/16	3/16	1/2	30	210-250	8-10	10
3/8	F	D-60°	0-1/8	Optional up to 250°F Max.	2	3/16-1/4	1/4	5/8	35	315-375	8-10	15.5
	F	E	0-3/32		2	3/16-1/4	1/4	5/8	35	340-380	8-10	14
	V	D-60°	0-3/32		3	3/16	3/16-1/4	5/8	35	260-300	8-10	19
	V, H, O	E	0-3/32		2	3/16	3/16-1/4	5/8	35	240-300	8-10	17
	H	D-90°	0-3/32		3	3/16	3/16-1/4	5/8	35	240-300	8-10	22
	O	D-110°	0-3/32		3	3/16	3/16-1/4	5/8	40	260-300	8-10	32

1 See also "Recommended Practices for Gas Shielded-Arc Welding of Aluminum and Aluminum Alloy Pipe," AWS D10.7.

2 F=Flat; V=Vertical; H=Horizontal; O=Overhead.

3 See joint designs on page 15.

4 Preheating at excessive temperatures or for extended periods of time will reduce weld strength. This is particularly true for base metals in heat-treated tempers.