

Table 5.1
Prequalified WPS Requirements^a (see 5.2)

Variable	Position	Weld Type	SMAW	SAW ^b			GMAW/ FCAW ^c
				Single	Parallel	Multiple	
Maximum Electrode Diameter	Flat	Fillet ^d	5/16 in [8.0 mm]	1/4 in [6.4 mm]			1/8 in [3.2 mm]
		Groove ^d	1/4 in [6.4 mm]				
		Root pass	3/16 in [4.8 mm]				
	Horizontal	Fillet	1/4 in [6.4 mm]	1/4 in [6.4 mm]			1/8 in [3.2 mm]
		Groove	3/16 in [4.8 mm]	Requires WPS Qualification Test			
	Vertical	All	3/16 in [4.8 mm] ^e				3/32 in [2.4 mm]
Overhead	All	3/16 in [4.8 mm] ^e	5/64 in [2.0 mm]				
Maximum Current	All	Fillet	Within the range of operation recommended by the filler metal manufacturer	1000 A	1200A	Unlimited	Within the range of operation recommended by the filler metal manufacturer
	All	Groove weld root pass with opening		600A	700A		
					Groove weld root pass without opening		
		Groove weld fill passes		1200A			
		Groove weld cap pass		Unlimited			
Maximum Root Pass Thickness ^b	Flat	All	3/8 in [10 mm]	Unlimited			3/8 in [10 mm]
	Horizontal		5/16 in [8 mm]				5/16 in [8 mm]
	Vertical		1/2 in [12 mm]				1/2 in [12 mm]
	Overhead		5/16 in [8 mm]				5/16 in [8 mm]
Maximum Fill Pass Thickness	All	All	3/16 in [5 mm]	1/4 in [6 mm]	Unlimited		1/4 in [6 mm]
Maximum Single Pass Fillet Weld Size ^f	Flat	Fillet	3/8 in [10 mm]	Unlimited			1/2 in [12 mm]
	Horizontal		5/16 in [8 mm]	5/16 in [8 mm]	5/16 in [8 mm]	1/2 in [12 mm]	3/8 in [10 mm]
	Vertical		1/2 in [12 mm]				1/2 in [12 mm]
	Overhead		5/16 in [8 mm]				5/16 in [8 mm]
Maximum Single Pass Layer Width	All (for GMAW/ FCAW) F & H (for SAW)	Root opening > 1/2 in [12 mm]		Split layers	Laterally displaced electrodes or split layer	Split layers	Split layers
		Any layer of width, w		Split layers if w > 5/8 in [16 mm]	Split layers with tandem electrodes if w > 5/8 in [16 mm]	Split layers if w > 1 in [25 mm]	(Footnote g)

^a Shaded area indicates nonapplicability.

^b See 5.8.2.1 for width-to-depth limitations.

^c GMAW-S shall not be prequalified.

^d Except root passes.

^e 5/32 in [4.0 mm] for EXX14 and low-hydrogen electrodes.

^f See 5.6.2 for requirements for welding unpainted and exposed ASTM A588.

^g In the F, H, or OH positions for nontubulars, split layers when the layer width, w > 5/8 in [16 mm]. In the vertical position for nontubulars or the flat, horizontal, vertical, and overhead positions for tubulars, split layers when the width, w > 1 in [25 mm].