
































"Designation by letters"

welding processes			cutting processes		
No.	DESIGNATION	symbol	No.	DESIGNATION	symbol
1	Carbon-arc welding	CAW	1	Air carbon-arc cutting	AAC
2	Cold welding	CW	2	Arc cutting	AC
3	Dip brazing	DB	3	Oxygen-arc cutting	AOC
4	Diffusion welding	DF	4	Carbon-arc cutting	CAC
5	Electron beam weldig	EBW	5	Chemical flux cutting	FOC
6	Electroslag welding	EW	6	Metal-arc cutting	MAC
7	Explosion welding	EXW	7	Oxygen cutting	OC
8	Furnace brazing	FB	8	Plasma-arc cutting	PAC
9	Flux-cored arc welding	FCAW	9	Metal powder cutting	POC
10	Forge welding	FOW			
11	Friction welding	FRW			
12	Flash welding	FW			
13	Gas metal-arc welding	GMAW			
14	Gas tungsten-arc welding	GTAW			
15	Induction brazing	IB			
16	Infrared brazing	IRB			
17	Induction welding	IW			
18	Laser beam welding	LBW			
19	Oxyacetylene welding	OAW			
20	Oxyhydrogen welding	OHW			
21	Plasma-arc welding	PAW			
22	Percussion welding	PEW			
23	Pressure gas welding	PGW			
24	Resistance brazing	RB			
25	Projection welding	RPW			
26	Resistance-seam welding	RSEW			
27	Resistance-spot welding	RSW			
28	Submerged-arc welding	SAW			
29	Shielded metal-arc welding	SMAW			
30	Stud welding	SW			
31	Torch brazing	TB			
32	Thermit welding	TW			
33	Ultrasonic welding	USW			
34	Thermit welding	UW			

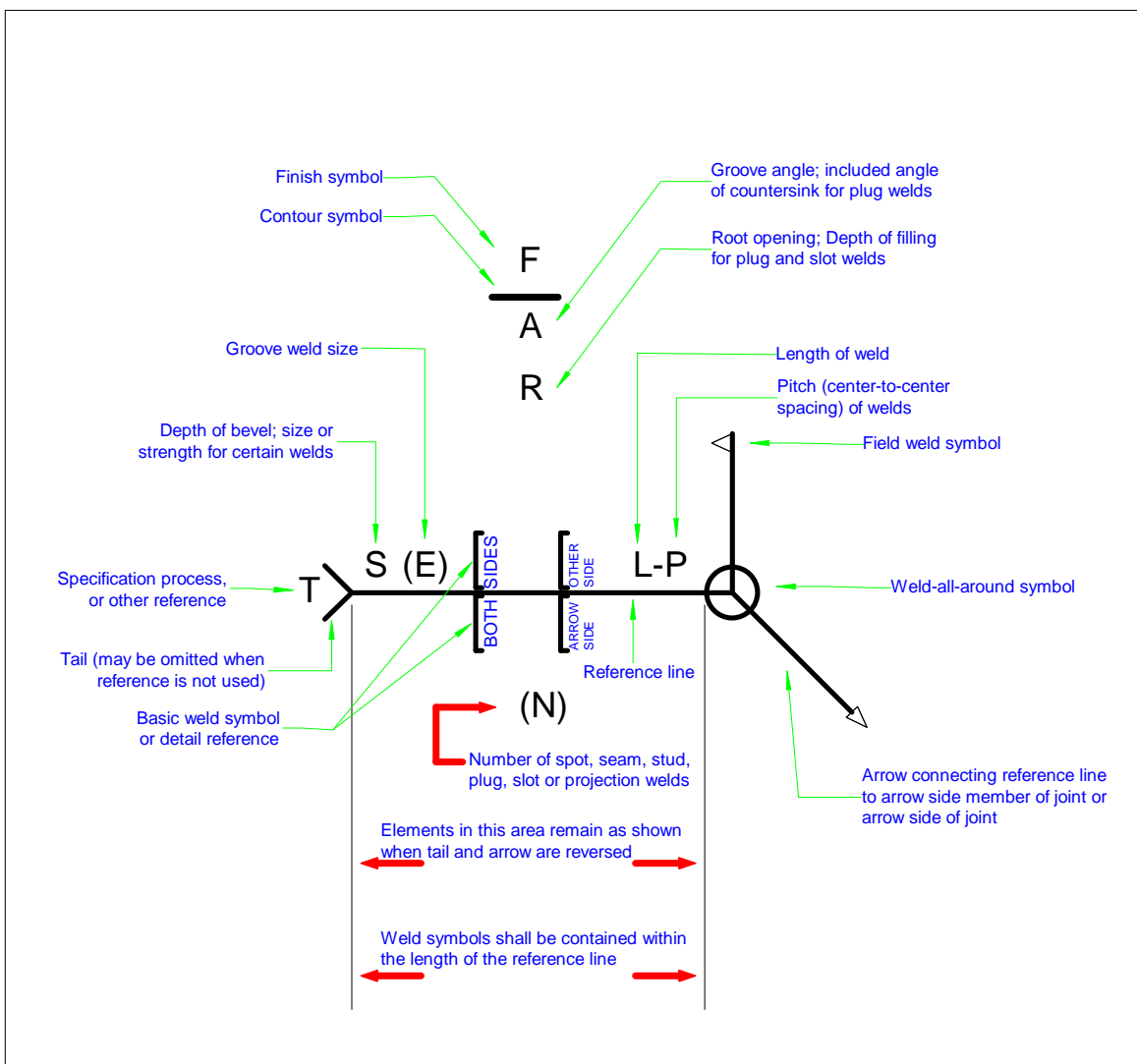
"wsymb"

ARROW SIDE	OTHER SIDE	WELD OR SUPPLEMENTARY ITEM
		FILLET
		SQUARE GROOVE
		VEE GROOVE
		BEVEL GROOVE
		U GROOVE
		J GROOVE
		FLARE VEE GROOVE
		FLARE BEVEL GROOVE
		PLUG OR SLOT WELD
		BACKING BAR (WITH GROOVE WELD SYMBOL OPPOSITE)
		SPACER BAR (WITH GROOVE WELD SYMBOL BOTH SIDES)
		BACK OR BACKING WELD
		SPOT WELD (SHEET METAL)
		SEAM WELD (SHEET STEEL)
	NOT APPLICABLE	STUD WELD
		FLUSH CONTOUR
		CONVEX CONTOUR
		CONCAVE CONTOUR

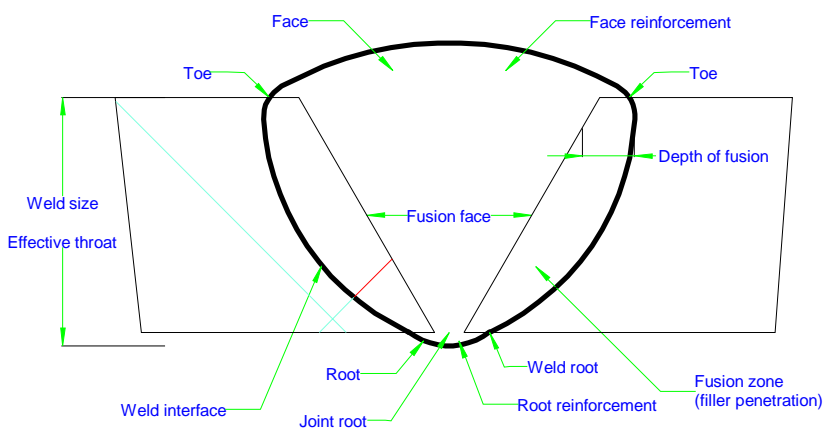
"ISO - AWS symbols"

ISO symbols			AWS symbols		
No.	DESIGNATION	symbol	No.	DESIGNATION	symbol
1	Butt weld between plates with raised edges		1	Edge weld	
2	Square butt weld		2	Square groove weld	
3	Single-V butt weld		3	V-groove weld	
4	Single-bevel butt weld		4	Bevel groove weld	
5	Single-V butt weld with broad root face		5	_____	no symbol
6	Single-bevel butt weld with broad root face		6	_____	no symbol
7	Single-U butt weld (parallel or sloping sides)		7	U-groove weld	
8	Single-J butt weld		8	J-groove weld	
9	Backing run		9	Back or backing weld	
10	Fillet weld		10	Fillet weld	
11	Plug weld		11	Plug or slot weld	
12	Spot (projection) weld		12	Projection weld	
13	Spot weld		13	Spot weld	
14	Seam weld		14	Seam weld	
15	_____	no symbol	15	Stud weld	
16	Surfacing weld		16	Surfacing weld	
17	_____	no symbol	17	Melt-thru weld	
18	_____	no symbol	18	Consumable insert (square)	
19	Permanent backing strip used Removable backing strip used		19	Permanent backing or spacer Backing to be removed	
20	Inclined joint		20	Scarf	
21	Surface joint		21	_____	no symbol
22	Edge weld		22	Edge weld	
23	Steeped-flanked single-V butt weld		23	V-groove weld	
24	Steeped-flanked single-V bevel butt weld		24	Bevel groove	
25	Fold joint		25	_____	no symbol
26	Flat (usually finished)		26	Flush or flat contour	
27	Convex		27	Convex contour	
28	Concave		28	Concave	
29	Toes shall be blended smoothly		29	No such designation	no symbol
30	Peripheral weld		30	Weld-all-around	
31	Field or site weld		31	Field weld	
32	_____	no symbol	32	Double V-groove with spacer	
33	_____	no symbol	33	Double U-groove with spacer	
34	_____	no symbol	34	Double bevel groove with spacer	
35	_____	no symbol	35	Double J-groove with spacer	
36	Filled weld leg size (size is preceded by lowercase "a")		36	Filled weld leg size	
37	Filled weld throat thickness (thickness is preceded by lowercase "z")		37	_____	no similar symbol designation
38	Tail or welding symbol for reference		38	Tail or welding symbol for reference info	
39	Staggered intermittent fillet weld		39	Staggered intermittent fillet weld	

"Location of welding symbol elements"



"common"



COMMON WELDING ELEMENTS Parts of the weld

Terms used to describe the parts of a groove weld :

- effective throat or size of weld
- face
- toe
- face reinforcement
- root reinforcement
- joint root
- weld root
- weld interface
- depth of fusion
- fusion zone or filler penetration

"types"

WELD JOINTS AND TYPES						
	WELD	BUTT	CORNER	EDGE	LAP	T
APPLICABLE WELD	SYMBOL					
BEVEL-GROOVE						
BRAZE						
CORNER-FLANGE						
EDGE-FLANGE						
FILLET						
FLARE-BEVEL-GROOVE						
FLARE-Vee-GROOVE						
J-GROOVE						
PLUG or SLOT WELD						
PROJECTION						
SEAM (steel weld)						
SLOT						
SPOT (sheet steel)						
SQUARE-GROOVE						
U-GROOVE						
Vee-GROOVE						