KOBELCO

DWG Stainless Series

The perfect flux-cored wires for gauge stainless steel welding

Kobelco's flux-cored wire series for thin plate welding: DWG-308L, DWG-309L, DWG-316L

Flux-cored .045″ wire is the popular choice for use in higher current ranges (over 150 amps). This is because of its advantage over other welding processes with solid wire or stick in terms of arc transfer stability in this range.

Kobelco's DWG flux-cored stainless .045″ wire has excellent arc transfer in wider current ranges from 80A to 220A. This wide current range cannot be achieved in conventional .045″ flux-cored wire. Because of unique wire structure, it provides a stable arc even below 150A, for which .035″ flux-cored wire is generally used for gauge welding.

Kobelco DWG can be used instead of the more expensive .035″ flux-cored wire, saving you substantial material cost. Kobelco DWG is designed for use with 100% CO_2 and 75%Ar-25% CO_2 shielding gas and complies with AWS A5.22 E308LT0-1/4, E309LT0-1/4 and E316LT0-1/4.

Stable arc transfer and ideal slag formula guarantee that slag comes off easily, creating a smooth and shiny bead surface. As very little spatter is generated, clean-up time after welding can be greatly reduced.

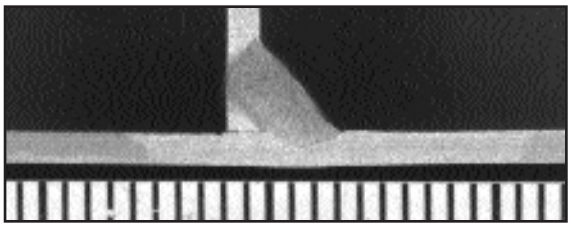


Fig. 2– Gauge (0.6″) welding with DWG-308L in horizontal fillet (100A-20V-16 in/min, 100% CO_2)

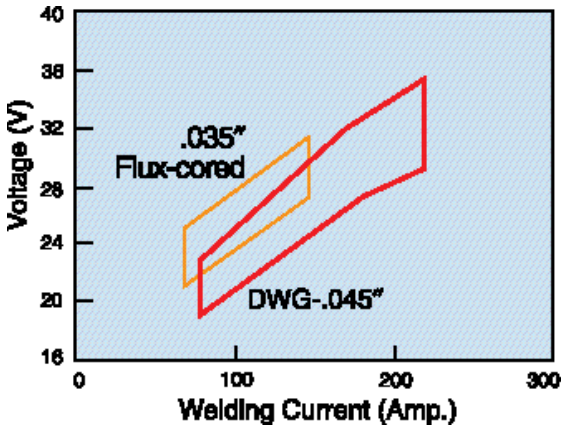


Fig. 3– Applied Welding Condition (Amperage-Volt, 100%CO_2)

Fig. 1– Horizontal fillet in 120A-22V (100% CO_2) with DWG-308L. Stable arc transfer and ideal slag formula.

Three other reasons to use DWG flux-cored wire

1. Higher deposition rate

Its unique wire structure assures a 15% higher deposition rate than regular .045″ flux-cored wire. This enables the welder to complete the job quickly and economically. (See Fig. 3).

2. Cost savings with 100% CO_2 shielding gas

Kobelco DWG flux-cored wire performs at its best with 100% CO_2 shielding gas, especially when used under 150A.

3. Failure-free arc ignition

Conductive flux (slag) enables re-ignition without clipping off the wire end. (See Fig. 5). Kobelco DWG wire eliminates this potential time-wasting frustration in automatic and tack welding. (See Fig. 4).

Fig. 5

Fig. 3– Deposition Rate Comparison

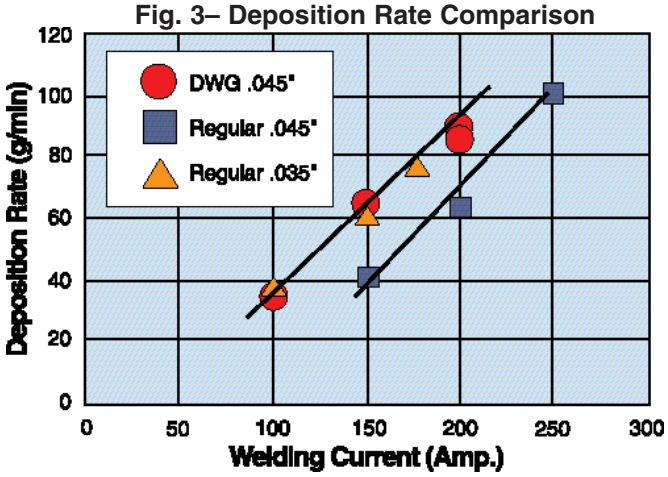
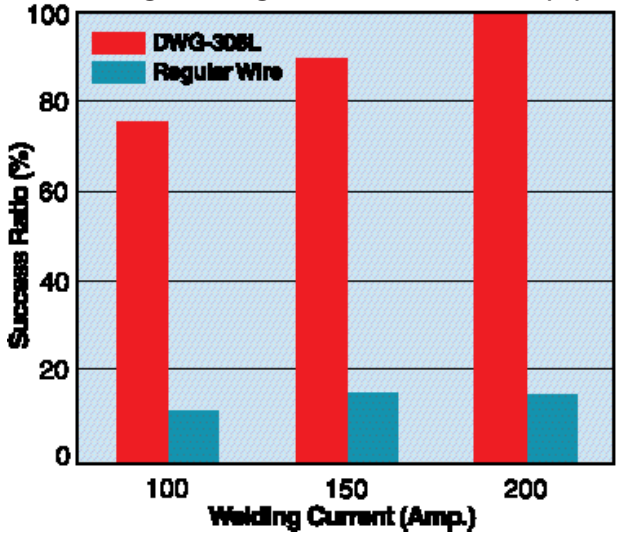


Fig. 4. Re-Ignition Success Ratio (%)



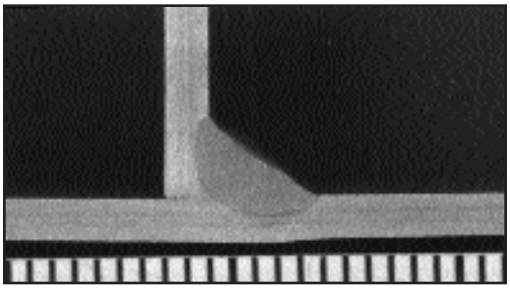
Chemical composition in DWG weld metal (100% CO_2 shielded)

Wire	Chemical Composition (wt. %)								Ferrite content	
	C	Si	Mn	P	S	Ni	Cr	Mo	Schaeffler (%)	WRC1992 (FN)
DWG-308L	0.03	0.62	1.25	0.03	0.02	9.7	19.3	-	8.9	9.7
DWG-309L	0.03	0.68	1.21	0.03	0.02	12.5	24.1	-	13.2	20.4
DWG-316L	0.03	0.61	1.24	0.03	0.02	12.2	18.6	2.3	6.5	6.9

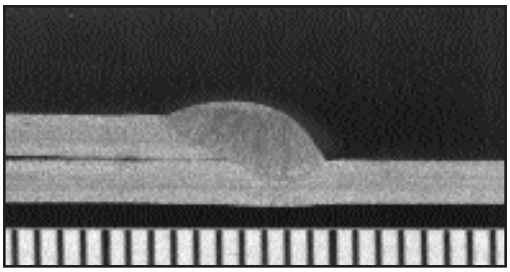
Mechanical properties of DWG weld metal (100% CO_2 shielded)

Wire	Size	Classification AWS A5.22	Yield Stress (0.2% offset, psi)	Tensile Stress (psi)	Elongation (%)
DWG-308L	.045″ x 28 lbs.	E308LT0-1/4	54,300	79,900	43
DWG-309L	.045″ x 28 lbs.	E309LT0-1/4	65,000	82,800	37
DWG-316L	.045″ x 28 lbs.	E316LT0-1/4	55,800	80,300	42

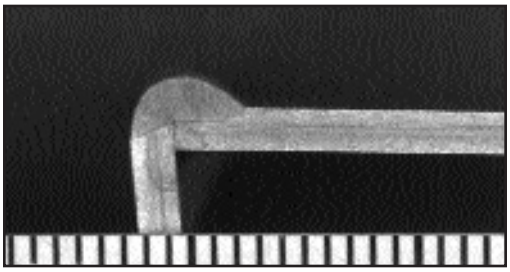
Application examples (cross-section)



Horizontal fillet in 120A-22V-24in/min (CO_2)
Base: 304L (14 gauge), Filler metal: DWG-308L



Lap joint in 120A-22V-16in/min (CO_2)
Base: 304L (14 gauge), Filler metal: DWG-308L



Corner joint in 100A-20V-24in/min (CO_2)
Base: 304L (14 gauge), Filler metal: DWG-308L

Welding operation

No special equipment is required to weld with DWG flux-cored wire. Just follow these instructions:

Power Source	Constant Voltage, DC-EP * Large capacity type may not result in unstable arc in low current welding
Shield Gas	100% CO_2 or C25 (Ar-25%CO_2)

Suggested Operating Ranges

Wire feeding speed (in./min.)	Welding Current (A)	Voltage (V)	Stick-out (in.)
140	85	18-21	1/2″
180	105	19-22	
220	130	22-25	
260	140	24-27	
300	165	26-29	5/8″-3/4″
340	175	27-31	
380	185	28-32	
420	195	28-33	
460	205	28-34	
500	215	28-34	

* Shielding gas flow: 40CFH
* Voltage shown is based on the value with 100% CO_2 shield

Applied base metal thickness (minimum)

Butt Joint	Horizontal Fillet	Lap Joint	Corner Joint	Vertical Downward Fillet
18 gauge	16 gauge	18 gauge	16 gauge	16 gauge

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