

SC-80ML

Metal-cored wire for 550MPa high tensile strength steel

Introduction



SC-80ML is a gas-shielded metal-cored wire developed for high-performance welding in heavy equipment, bridge construction, and structural fabrication. Combining the high deposition efficiency of flux-cored wire with the superior operational stability of solid wire, it ensures both productivity and quality.

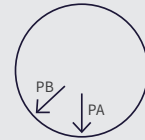
Engineered for an exceptionally smooth and stable arc, SC-80ML delivers low spatter, minimal slag coverage, and excellent impact toughness even at low temperatures. Its consistent performance and high deposition rates make it ideal for demanding applications requiring strength, efficiency, and reliability.

Specifications

- AWS A5.28 E80C-Ni1 H4
- EN ISO 17632-A - T50 4 Z1Ni M M21 3 H5

Welding Position

- Flat, horizontal



Deposition Rate & Efficiency

Wire Size	Welding Conditions		Wire Feed Speed m/min (in/min)	Deposition Efficiency (%)	Deposition Rate kg/hr(lb/hr)
	Amps (A)	Volts (V)			
1.2mm (0.045in)	200	24~26	5.5(210)	92~94	2.8(6.2)
	250	26~28	7.9(310)	93~95	3.8(8.4)
	300	28~30	10.1(390)	94~96	5.6(12.3)
1.6mm (1/16in)	250	26~28	3.9(150)	91~93	3.5(7.7)
	300	28~30	5.5(210)	92~94	4.8(10.6)
	350	29~31	6.9(270)	94~97	6.1(13.4)

Mechanical Properties of All-Weld Metal

Item	Tensile Test			CVN Impact Test	
	YS MPa (ksi)	TS MPa (ksi)	EL (%)	Temp °C(°F)	Joules (ft*lbf)
98% Ar + 2% O ₂	585 (85)	663 (96)	26.2	-45(-50)	51(38)
95% Ar + 5% O ₂	571 (83)	649 (94)	26.5	-45(-50)	59(44)
90% Ar + 10% CO ₂	569 (83)	642 (93)	25.2	-45(-50)	56(41)
80% Ar + 20% CO ₂	561 (81)	631 (91)	26.9	-45(-50)	62(46)
AWS A5.28 E80C-Ni1	≥470 (68)	≥ 550 (80)	≥ 24	≥27J at -45°C (≥20ft·lbs at -50°F)	

Chemical Composition of All-Weld Metal

Item	Chemical Composition of All-Weld Metal (Wt. %)									
	C	Si	Mn	P	S	Ni	Cr	Mo	V	Cu
98% Ar + 2% O ₂	0.072	0.48	1.45	0.010	0.021	1.01	0.023	0.089	0.009	0.018
95% Ar + 5% O ₂	0.068	0.43	1.41	0.009	0.019	0.99	0.021	0.085	0.008	0.015
90% Ar + 10% CO ₂	0.063	0.42	1.33	0.009	0.017	0.96	0.021	0.081	0.007	0.014
80% Ar + 20% CO ₂	0.059	0.40	1.29	0.009	0.016	0.95	0.023	0.080	0.008	0.012
AWS A5.28 E80C-Ni1	≤0.12	≤0.90	≤1.75	≤0.025	≤0.030	0.80~1.10	-	≤0.30	≤0.03	≤0.35

Consumable : SC-80ML Diameter : 1.2mm (0.045in) Amp/Volt : 280-300A / 27-30V

Packaging

Diameter mm (in)	Spool kg (lbs)	Pac kg (lbs)
1.2 (0.045)	15 (33)	250 (551)
1.6 (1/16)		

Proper Welding Parameters

Shielding Gas	Welding Position	Wire Diameter	
		1.2mm (0.045in)	1.6mm (1/16in)
Ar + 1-5% O ₂ / Ar + 10-20% CO ₂	F & HF	120-300A	160-320A