

SC-70A

Metal-cored wire for mild and 490MPa high tensile strength steel

Introduction



SC-70A is a gas-shielded metal-cored wire designed for high-efficiency welding in shipbuilding, machinery, bridge construction, and structural fabrication, including automated and robotic applications. It combines the high deposition rates of a flux cored wire with the efficiency of a solid wire, ensuring productivity and consistent weld quality.

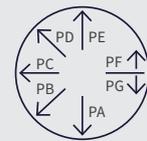
Engineered to minimize slag coverage, SC-70A enables efficient multi-pass welding without inter-pass cleaning while maintaining a stable arc and smooth bead. Its reliable performance and compatibility with CO₂ or mixed shielding gases make it ideal for demanding fabrication environments requiring speed and precision.

Specifications

- AWS A5.18 E70C-3C/-6M
- EN ISO 17632-A T 42 3 M C11 H5, T 46 3 M M21 1 H5
T 42 2 M C11 H5, T 42 2 M M21 1 H5

Welding Position

- All position welding



Deposition Rate & Efficiency

Shielding Gas	Amps (A)	Volts (V)	Deposition Efficiency (%)	Deposition Rate (kg/hr)
100% CO ₂	200	25	91~93	2.6
	250	29	92~94	4.0
	300	32	93~95	5.4
	350	34	94~96	6.8
80%Ar+20% CO ₂	200	24	92~94	2.7
	250	28	93~95	4.2
	300	31	95~97	5.7
	350	33	95~98	7.2

Mechanical Properties of All Weld Metal

Item	Tensile Test			CVN Impact Value	
	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C(°F)	Joules (ft*lbf)
100% CO ₂	500 (73)	560 (81)	27.0	-20(0)	70(52)
				-30(-20)	50(37)
80% Ar + 20% CO ₂	540 (78)	610 (88)	26.4	-20(0)	84(62)
				-30(-20)	60(44)
AWS A5.18 E70C-3C/-6M	≥ 400 (58)	≥ 490 (70)	≥ 22	≥ 27J at -20°C (≥ 20ft.lbf at 0°C)	

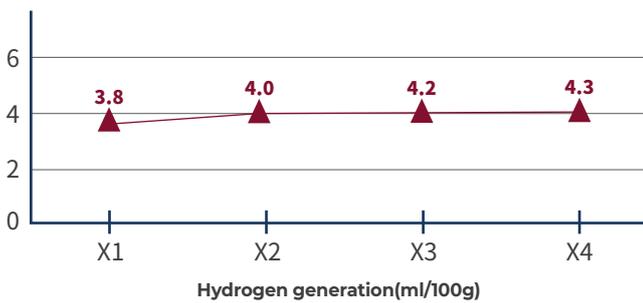
Consumable : SC-70A Diameter : 1.2mm (0.045in) Amp/Volt : 280A/32V(100% CO₂), 280A/30V(80% Ar + 20% CO₂)

Chemical Composition of All-Weld Metal

Item	Chemical Composition of All-Weld Metal (wt%)				
	C	Si	Mn	P	S
100% CO ₂	0.06	0.40	1.40	0.011	0.008
80% Ar + 20% CO ₂	0.06	0.55	1.55	0.010	0.009
AWS A5.18 E70C-3C/-6M	≤0.12	≤0.9	≤1.75	≤0.03	≤0.03

Consumable : SC-70A Diameter : 1.2mm (0.045in) Amp/Volt : 280A/32V(100% CO₂), 280A/30V(80% Ar + 20% CO₂)

Diffusible Hydrogen Content



Average Hydrogen Content : 4.1 ml / 100g Weld Metal

Packaging

Diameter mm (in)	Spool	Drum
1.2 (0.045)	15 (33)	200 (441) 250 (551)
1.4 (0.052)		
1.6 (1/16)		

Proper Welding Parameters

Diameter mm (in)	Amps/Volts	Shielding Gas	Flow Rate
1.2 (0.045)	260A / 25V	80% Ar + 20% CO ₂	20l/min

Shielding Gas	Welding Position	Diameter mm (in)		
		1.2 (0.045)	1.4 (0.052)	1.6 (1/16)
80% Ar + 20% CO ₂	F & HF	140-300A	260-320A	290-340A