

SM-70S

Solid Wire optimized for Robotic Welding of Galvanized Steel

Introduction



SM-70S is an all-positional, high-speed solid wire optimized for robotic welding of galvanized steel, providing clean, low-spatter welds and superior pore prevention, making it a top choice in the automotive industry.

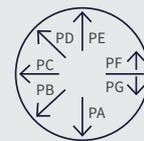
Hot-dip galvanized steel (HGA) is increasingly used in the automotive industry for its excellent corrosion resistance and high strength (590 MPa), which help extend vehicle lifespan and reduce weight through thinner components. To prevent porosity during welding caused by galvanized layer vaporization, the SM-70S solid wire was developed, which offers excellent weldability in both short circuit transfer and pulse arc modes. Optimized for robotic welding, SM-70S (ER70S-3) is now widely adopted by leading automakers for hot-dip galvanized steel, demonstrating superior pore prevention compared to standard ER70S-6 wires.

Specifications

- AWS A5.18 ER70S-3
- EN ISO 14341-A G2Si

Welding Position

- All position welding



Approvals

Shielding gas	Welding Position	Register of shipping & Size mm(in)
C1 (100% CO ₂)	All	ABS, LR 0.8~1.6 (0.030~1/16)
M21 (80% Ar + 20% CO ₂)		



Mechanical Properties of All Weld Metal

Item	Tensile Test			CVN Impact Value	
	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C(°F)	Avg. J(ft-lbs)
C1 (100% CO ₂)	430 (6.4)	515 (74.7)	28.5	-20 (-4)	80 (59.0)
M21 (80% Ar + 20% CO ₂)	440 (63.8)	535 (77.6)	28.0	-20 (-4)	125 (92.2)
AWS A5.18 ER70S-3	≥ 400	≥480	≥ 22	Avg. ≥ 27J at -20°C	

Consumable : SM-70S Shielding gas : C1, M21
 Diameter : 1.2mm (0.045in) Spool : 15kg (33lbs)

Chemical Composition of Wire

Item	Chemical Composition of Wire (wt%)				
	C	Si	Mn	P	S
SM-70S	0.07	0.65	1.14	0.015	0.010
AWS A5.18 ER70S-3	0.06~0.015	0.45~0.75	0.90~1.40	≤ 0.025	≤ 0.035

Packaging

Diameter mm (in)	Spool kg (lbs)	Pac kg (lbs)
0.8 (0.030)	5 (11) 15 (33) 20 (44)	250 (551) 300 (661) 350 (771)
0.9 (0.035)		
1.0 (0.040)		
1.2 (0.045)		
1.4 (1/16)		
1.6 (1/16)		

Proper Welding Parameters

Consumable	Welding Position	Wire Diameter		
		1.2mm (0.045in)	1.4mm (0.052in)	1.6mm (1/16in)
SM-70S	F & HF	80-350A	100-370A	170-390A
	V-up	50-160A	80-180A	-
	O.H	50-160A	80-180A	