

S-7018.G

Electrode for highly efficient welding of 490MPa high tensile steel

Introduction



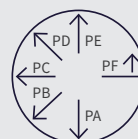
S-7018.G is a high-efficiency, iron powder low-hydrogen electrode designed for exceptional performance when welding 490 MPa-class high-tensile steel. Compatible with both AC and DC currents, it offers excellent usability across all welding positions, making it an ideal choice for demanding field conditions.

Engineered for both butt and fillet welding in heavy structural applications, S-7018.G delivers outstanding mechanical properties, along with strong crack resistance and reliable radiographic (X-ray) performance. Widely used in shipbuilding, structural fabrication, heavy steel works, and pressure vessel manufacturing, S-7018.G offers a reliable blend of versatility, strength, and consistent weld quality for demanding industrial applications.

Specifications

- AWS A5.1 E7018
- EN ISO 2560-A E42 3 B 12

Welding Position



Approvals

AWS	Dia mm(in)	Welding Position	Grade						
			KR	ABS	LR	BV	DNV	NK	CWB
A5.1 E7018	2.6(3/32) ~ 5.0(3/16)	All	3H10, 3YH10	3H10, 3Y	3YH15	3YHH	3YH10	KMW 53HH	CSA W48 E4918-H8
	6.0 (15/64)	Flat							

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)
4.0 x 400 mm (5/32 x 16 in)	480 (70)	570 (82)	29	-30 (-20)	110 (82)
AWS Spec.	≥ 400 (58)	≥ 490 (70)	≥ 22	≥ 27 (20)	

Consumable : S-7018.G Amp./Volt. : 170A / 23~24V Polarity : DC+

Chemical Composition of All Weld Metal

Item	Chemical Composition (wt%)				
	C	Si	Mn	P	S
S-7018.G	0.06	0.32	1.01	0.017	0.008
AWS Spec.	≤ 0.15	≤ 0.75	≤ 1.60	≤ 0.035	≤ 0.035

Consumable : S-7018.G Amp./Volt. : 170A / 23~24V Polarity : DC+

Diffusible Hydrogen Content

Welding Conditions

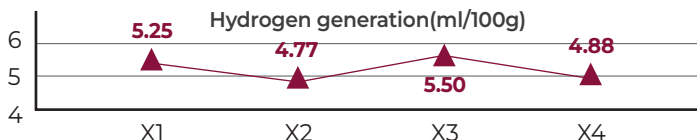
Consumable : S-7018.G Welding position : 1G
Diameter mm(in) : 4.0 x 400 (5/32 x 16) Amp(A) / Volts(V) : 160-170A
Redrying conditions: 350°C X 1hr (662°F X 1hr) Current type & Polarity : AC/DC+

Hydrogen Analysis Using Gas Chromatography Method

Hydrogen evolution time : 72 hrs Analysis Temp. : 25°C (77°F)
Evolution temp : 25°C (77°F) Exposure Condition : 80%RH-30°C (86°F)
Barometric pressure : 780 mm-Hg

X1	X2	X3	X4
5.25	4.77	5.50	4.88

* Average Hydrogen Content : 5.1 ml/100g Weld Metal



Packaging

Diameter mm(in)	Length mm(in)	Packet kg(lbs)	Carton kg(lbs)
2.6 (3/32)	350 (14)	5 (11)	20 (44)
3.2 (1/8)	350 (14)		
4.0 (5/32)	400 (16)		
5.0 (3/16)	400 (16)		

Proper Welding Parameters

Diameter mm(in)	2.6 (3/32)	3.2 (1/8)	4.0 (5/32)	5.0 (3/16)
Length mm(in)	350(14)	350(14) 400(16)	400(16) 450(18)	400(16) 450(18)
Recommended Current Range (AC or DC+ Amp)	Flat (1G-PA)	60-90	90-140	130-190
	3G(PF) & 4G, 5G(PE)	50-80	80-120	120-170
				150-200