

Rev. 03

S-8018.C3

COVERED ARC WELDING ELECTRODE FOR 600MPa CLASS HIGH TENSILE STEEL & 1% Ni STEEL

2021.05

HYUNDAI WELDING CO., LTD.

			S-8018.C3
Specification	AWS A5.5	E8018-C3	
	JIS Z 3211	E5518-N2	
	EN ISO 2560-A	E46 4 1Ni B 3 2	
Applications	Welding of high tensi pressure vessels, sto	le steel and 1% Ni steel trage tanks for low tempe	used in machinery, erature.
Characteristics on Usage	S-8018.C3 is an iron welding. Good tough because the weld m usability are good.	powder low hydrogen ty ness of all-weld metal a netal contains about 1%	vpe electrode for all position t low temperature is obtained Ni. X-Ray performance and
Note on Usage	1. Dry the electrodes before use.	at 350℃~400℃(662~7	752°F) for 60 minutes
	2. Adopt back step m prepared for this p metal is in danger	nethod or strike the arc c particular purpose, becau of initiating cracking.	on a small steel plate use arc striking on base
	3. Preheat at 80~100 to be applied varies)℃(176~212°F) before u s in accordance with pla	se. The temperature te thickness.

<u>S-8018.C3</u>

Method by AWS Rules

Mechanical Properties & Chemical Compositions of all-Weld Metal

Welding Conditions

 Diameter
 : 4.0 X 400mm(5/32 X 16in)

 Amp./ Volt.
 : 170 / 25 ~ 26

 Interpass Temp.
 : 131~145°C(268~393°F)

 Polarity
 : DC +

[Joint Preparation & Layer Details]

* Mechanical Properties of All Weld Metal

		CVN Impact Value J (ft·lbs)			
Consumable	YS MPa (Ibs/in²)	TS MPa (Ibs/in²)	EL (%)	-40℃(-40°F)	
S-8018.C3	503(73,000)	606(87,900)	30.8	99(73)	
AWS Spec.	470(68,200) ~550(79,700)	≥550(79,700)	≥19	≥27(20)	

Chemical Analysis of All Weld Metal(wt%)

Consumable	Chemical Composition (%)						
Consumable	С	Si	Mn	Р	S	Ni	
S-8018.C3	0.06	0.57	1.10	0.015	0.005	0.88	
AWS Spec.	≤0.12	≤0.80	0.40 ~ 1.25	≤0.03	≤0.03	0.80 ~ 1.10	

This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING CO., LTD. affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.

Weldability & Diffusible Hydrogen Contents & Proper Welding conditions

Weldability

Division	Flat position	Vertical up position
Arc stability	Good	Excellent
Melting rate	Excellent	Excellent
Deposition rate	Excellent	Excellent
Resistance of spatter occurrence	Good	Good
The others	Good	Good

• Diffusible Hydrogen Contents of Weld Metal

Consumable	Welding current	Diffusible hydrogen contents (៧/gr. Weld metal)					Drying condition of
		X ₁	X ₂	X ₃	X ₄	Avg.	
S-8018.C3	DC+ 170 Amp.	5.7	6.4	6.3	6.5	6.2	350℃ x 1hr. (662°F X 1hr)

Sizes Available and Recommended Currents

Diameter, mm(in)		2.6 (3/32)	3.2 (1/8)	4.0 (5/32)	5.0 (3/16)	6.0 (15/64)
Length, mm(in)		350(14)	350(14)	400(16)	400(16)	450(18)
Recommended current range (AC or DC+ Amp.)	Flat (1G-PA)	55 ~90	90 ~130	130 ~190	190 ~250	250 ~310
	3G (PF) & 4G,5G (PE)	50 ~80	80 ~120	110 ~170	_	_

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