

S-8018.B2

COVERED ARC WELDING ELECTRODE
FOR HIGHLY EFFICIENT WELDING
OF 600MPa CLASS HIGH TENSILE STEEL

2023.04

HYUNDAI WELDING CO., LTD.



❖ Specification

<i>AWS A5.5</i>	E8018-B2
<i>JIS Z 3223</i>	E5518-1CM
<i>ISO 3580-A</i>	E CrMo1 B 3 2

❖ Applications

Welding of 1.25% Cr-0.5% Mo heat resistant steel used for pipes of boilers for electric power plant, equipment for oil refining industries and high temperature synthetic chemical industries.

❖ Characteristics on Usage

S-8018.B2 is an iron powder, low hydrogen type electrode. Its coating contains much iron powder, increasing working efficiency. Owing to this high working efficiency, it is most suitable for welding thick steam pipes and repair welding of cast steel.

❖ Note on Usage

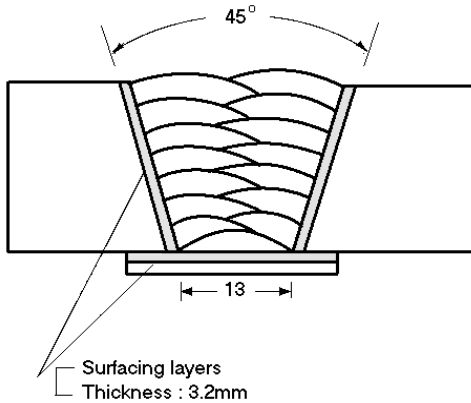
1. Dry the electrodes at 350~400°C (662~752°F) one hours before use.
2. Preheat at 150~300°C (302~572°F) and post-heat at 670~730°C (1238~1346°F).
3. Keep the arc as short as possible.



Mechanical Properties & Chemical Compositions of all-Weld Metal

❖ **Welding Conditions**

Method by AWS Rules



[Joint Preparation & Layer Details]

Diameter, : 4.0 X 400mm(5/32 X 16in)
 Amp./ Volt. : 170 / 23~25
 Interpass Temp. : 170~190℃ (338~374°F)
 Polarity : DC +

❖ **Mechanical Properties of The Weld Metal**

consumable	Tensile test			PWHT	
	YS MPa (lbs/in ²)	TS MPa (lbs/in ²)	EL (%)	Temp. ℃(°F)	Time
S-8018.B2	563 (82,000)	641 (93,000)	30.8	690 (1,274)	1hr
AWS A5.5	≥460 (≥67,000)	≥550 (≥80,000)	≥19	690 (1,274)	1hr

❖ **Chemical Analysis of The Weld Metal(wt%)**

Consumable	Chemical Composition (%)						
	C	Si	Mn	P	S	Cr	Mo
S-8018.B2	0.08	0.32	0.75	0.012	0.005	1.20	0.50
AWS Spec	0.05 ~ 0.12	≤0.80	≤0.90	≤0.03	≤0.03	1.00 ~ 1.50	0.40 ~ 0.65

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**

Item \ Division	Flat position	Vertical up position
Arc stability	Excellent	Good
Melting rate	Good	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 (ml/gr. Weld metal)					Drying condition of test electrode
		X ₁	X ₂	X ₃	X ₄	Avg.	
S-8018.B2	DC +170 Amp.	6.88	6.51	7.10	6.72	6.80	350°C (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 ~ 240	250 ~ 300
	3G (PF) & 4G,5G (PE)	50 ~ 80	80 ~ 120	120 ~ 170	-	-

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Approval

❖ Authorized Approval Details

Classification		Dia. mm(in)	Welding position	Grade						
KS	AWS			KR	ABS	LR	BV	DNV	GL	NK
-	E8018-B2	2.6(3/32) ~4.0(5/32)	All		AWS A5.5 E8018-B2					
		5.0(3/16) ~6.0(15/64)	F, H-Fil							

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