HYUNDAI WELDING

Rev. 01

S-8016.C1

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

HYUNDAI WELDING CO., LTD.

S-8016.C1

❖ Specification

AWS A5.5	E8016-C1
JIS Z3211	E5516-N5 AP L
EN ISO 2560-A	E46 5 2Ni B 1 2

❖ Applications

S-8016.C1 is deposited welding of 2.5%Ni steel used in machinery for low temperature.

❖ Characteristics on Usage

S-8016.C1 is a low hydrogen, all position electrode depositing weld-metal comprising 2.5% Ni. The deposit is extremely dense and the good mechanical properties make this electrode particularly suited for weld-ments to withstand impact at sub-normal temperatures (lowest -60℃).

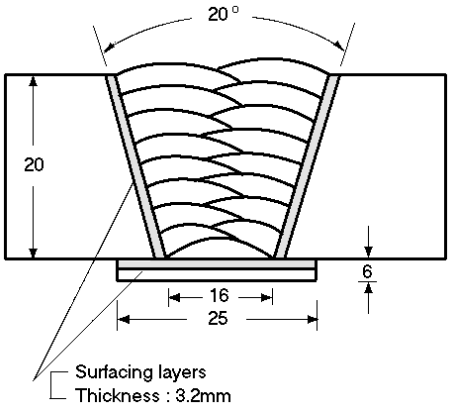
❖ Note on Usage

1. Dry the electrodes at 350℃～400℃(662～752°F) for 60 minutes before use.
2. Keep the arc as short as possible, and avoid large width weaving.
3. Adopt back step method or strike the arc on a small steel plate prepar-ed for this particular purpose to prevent blowholes at the arc starting.
4. As excessive heat input causes deterioration of impact values weld with proper heat-input electrode according to the impact values required.

Mechanical Properties & Chemical Compositions of all-Weld Metal

❖ Welding Conditions

Method by AWS Rules



[Joint Preparation & Layer Details]

Diameter, mm(in)	:	4.0 X 400(5/32 X 16)
Amp./ Volt.	:	170 / 25 ~ 26
Interpass Temp.℃(°F)	:	131~145(268~393)
Polarity	:	AC or DC +

❖ Mechanical Properties of The Weld Metal

[605℃(1121°F) X 1hr, S.R]

Consumable	Tensile test			CVN Impact Value J (ft·lbs)
	YS MPa (ksi)	TS MPa (ksi)	EL (%)	-60℃ (-76°F)
S-8016.C1	515(75)	592(86)	32.0	116(86)
AWS Spec.	≥460(67)	≥550(80)	≥19	-

❖ Chemical Analysis of The Weld Metal(wt%)

Consumable	Chemical Composition (%)					
	C	Si	Mn	P	S	Ni
S-8016.C1	0.06	0.52	1.03	0.012	0.006	2.38
AWS Spec	≤0.12	≤0.60	≤1.25	≤0.03	≤0.03	2.0 ~ 2.75

Weldability
& Diffusible Hydrogen Contents & Proper Welding conditions

❖ Weldability

Item \ Division	Flat position	Vertical up position
Arc stability	Good	Good
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 (㎖/gr. Weld metal)					Drying condition of test electrode
		X_1	X_2	X_3	X_4	Avg.	
S-8016.C1	AC 170 Amp.	6.32	6.35	6.40	6.49	6.39	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 position	55 ~90	90 ~130	130 ~190	190 ~250	250 ~310
	Vertical & Overhead position	50 ~80	80 ~120	110 ~170	150 ~200	-