HYUNDAI WELDING

Rev. 01

S-7016.G

COVERED ARC WELDING ELECTRODE
FOR 490MPa CLASS HIGH TENSILE STEEL

HYUNDAI WELDING CO., LTD.

S-7016.G

❖ Specification

AWS A5.1	E7016
JIS Z3211	E4916
EN ISO 2560-A	E42 3 B 1 2

❖ Applications

Structures using 490MPa class high tensile steel, bridges, buildings, ship, high pressure vessels, rolling stock and off-shore structures.

❖ Characteristics on Usage

S-7016.G can be used welding of 55Kg/mm^2 class high tensile steel. Its deposit weld metal of extremly good mechanical properties. Its usability is good in all position welding.
Crack resistibility of all-weld metal is good it enables heavy plate welding to be performed assuredly

❖ Note on Usage

1. Dry the electrodes at 300~350℃ (572~662°F) for 30~60 minutes before use.

2. Keep the arc as short as possible, and avoid large width weaving.

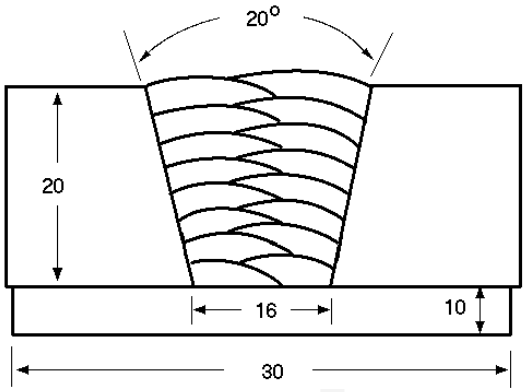
3. Adopt back step method or strike the arc on a small steel plate prepared for this particular purpose to prevent blowholes at the arc starting.

4. Use the wind screen against strong wind.

Mechanical Properties & Chemical Compositions of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Diameter. mm(in)	:	4.0 X 400(5/32 X 16)
Amp./ Volt.	:	170 / 24~25
Interpass Temp. ℃(°F)	:	131 ~ 145 (268~293)
Polarity	:	AC

❖ Mechanical Property of All Weld Metal

Consumable	Tensile test			CVN Impact Test (Joule)
	YS MPa (ksi)	TS MPa (ksi)	EL (%)	-30℃(-22°F)
S-7016.G	560(81)	641(93)	28	68(50)
AWS Spec.	≥ 400(58)	≥ 490(71)	≥ 22	≥ 27(20)

❖ Chemical Composition of All Weld Metal(wt%)

Consumable	Chemical Composition (%)				
	C	Si	Mn	P	S
S-7016.G	0.09	0.50	1.20	0.012	0.009
AWS Spec.	≤0.15	≤0.75	≤1.60	≤0.035	≤0.035

Diffusible Hydrogen Content

❖ Welding Conditions

consumable	:	S-7016.G	Welding Position	:	1G
Diameter mm(in)	:	4.0 x 400(5/32 x 16)	Amp.(A) / Volts(V)	:	170~180Amp.
Re-drying conditions	:	350℃ 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 ℃(77°F)
Evolution Temp.	:	25 ℃(77°F)	Exposure Condition	:	80%RH-30℃(86°F)
Barometric Pressure	:	780 mm-Hg			

❖ Result (㎖/100g Weld Metal)

X1	X2	X3	X4
8.0	7.7	8.2	8.1

Average Hydrogen Content 8.0 ㎖/100g Weld Metal

Weldability & Size Available and recommended Current

❖ Weldability

Item \ Division	Flat position	Vertical position
Arc stability	Good	Good
Melting rate	Excellent	Excellent
Deposition rate	Excellent	Excellent
Resistance of spatter occurrence	Excellent	Excellent
Bead appearance	Good	Good
The others	Good	Good

❖Sizes Available and Reconnended Current

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 ~85	90 ~130	130 ~180	180 ~240	250 ~310
	Vertical & Overhead position	50 ~80	80 ~120	110 ~170	150 ~200	-