HYUNDAI WELDING

Rev. 00

S-7016.O

COVERED ARC WELDING ELECTRODE
FOR 490MPa CLASS HIGH TENSILE STEEL

HYUNDAI WELDING CO., LTD.

S-7016.O

❖ Specification

AWS A5.1	***E7016***
JIS Z3211	***E4316***
EN ISO 2560-A	***E42 2 B 1 2***

❖ Applications

S- 7016.O can be used for One- side welding of pipe and general butt joints of carbon steel and high tensile steel.

❖ Characteristics on Usage

S- 7016.O is an low hydrogen type electrode for one side welding of 490MPa class high tensile steel.
Extremely good arc stability in one side welding with relatively low current.

❖ Note on Usage

1. Dry the electrodes at 300～350℃ for 30～60 minutes before use.

2. Stop the arc after moving the crater to the side wall of the groove.

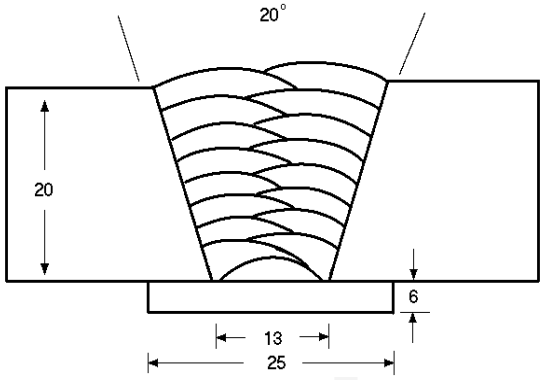
3. Adopt back step method or strike the arc on a small steel plate prepared for this particular purpose to prevent blowholes at the arc starting.

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

Mechanical Properties & Chemical Compositions of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Diameter(mm)	:	**4.0mm x 400**
Amp./ Volt.	:	170 / 23~24
Interpass Temp.(℃)	:	130 ~ 150
Polarity	:	AC

❖ Mechanical Property of All Weld Metal

Consumable	Tensile test			CVN Impact Test (Joule)	
	YS (MPa)	TS (MPa)	EL (%)	-20℃	-30℃
S-7016.O	489	566	29.6	132	109
AWS Spec.	≥ 400	≥ 490	≥ 22	≥ 27 at - 30℃	

❖ Chemical Composition of All Weld Metal(wt%)

Consumable	Chemical Composition				
	C	Si	Mn	P	S
S-7016.O	0.072	0.45	1.06	0.012	0.006
AWS Spec.	≤0.15	≤0.75	≤1.60	≤0.035	≤0.035

Weldability & Diffusible Hydrogen Contents

❖ Weldability

Division Item	Flat position	Vertical position	Root pass
Arc stability	Good	Good	Good
Melting rate	Excellent	Excellent	Excellent
Resistance of spatter occurrence	Excellent	Excellent	Excellent
Bead appearance	Good	Good	Good
Slag detachability	Excellent	Excellent	Excellent
The others	Good	Good	Good

❖ Diffusible Hydrogen Contents of Weld Metal

Consumable	Welding current	Diffusible hydrogen contents (㎖/gr. Weld metal)					Test method
		X_1	X_2	X_3	X_4	Avg.	
S- 7016.O (4.0 mmx 400)	AC 170 Amp.	4.11	4.50	5.02	4.73	4.59	Gas Chromatograph

Average Hydrogen Content 4.59 ㎖/100g Weld Metal

Size Available and recommended Current & Approval

❖Sizes Available and Reconnended Current

Diameter (mm)		2.6	3.2	4.0	5.0
Length (mm)		350	350	400	400
Recommended current range (AC or DC+ Amp.)	Flat position	60 ~ 90	90 ~ 130	130 ~ 180	180 ~ 240
	Vertical & Overhead position	50 ~ 80	80 ~ 120	110 ~ 170	150 ~ 200
	Root pass	30 ~ 80	60 ~ 110	90 ~ 140	130 ~ 180

❖ Authorized Approval Details

Classification	Dia. (mm)	Welding position	Grade						
AWS			KR	ABS	LR	BV	DNV	GL	NK
E7016	2.6 ~ 5.0	All	3H10, 3YH10	3H10, 3Y	3, 3YH15	-	3YH10	-	KMW 53HH

Notice

This test report is made for giving general information, and it's not meaning guarantee.
Test results are changeable by several welding
- parameter including base materials