HYUNDAI WELDING

Rev. 01

SM-70S

GAS METAL ARC WELDING CONSUMABLES
FOR WELDING OF Mild & 490Mpa CLASS
HIGH TENSILE STEEL

2019.09

HYUNDAI WELDING CO., LTD.

SM-70S

❖ Specification

AWS A5.18	ER70S-3
EN ISO 14341-A	G2Si

❖ Applications

Butt and fillet welding of vehicles, buildings, ships, machinery and bridge

❖ Characteristics on Usage

SM-70S is a solid wire designed for all position welding and high speed welding of steel sheets can be performed easily by short-circuiting welding.

Arc is stable and spatter loss is low.

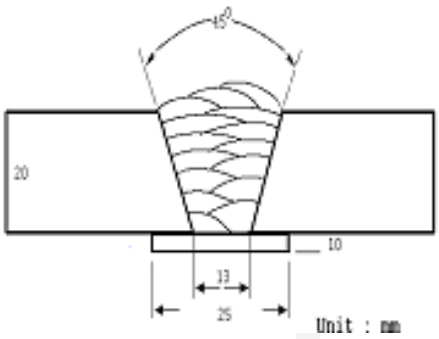
❖ Note on Usage

1. Use with Argon + 15~25% CO_2 gas.
2. Flow quantity of shielding gas should be 20ℓ/min. approximately.
3. Use wind screen against wind.
4. Keep distance between tip and base metal 10~15mm for less than 250A, and 15~20mm for more than 250A of welding current.

Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Rules



[Joint Preparation & Layer Details]

Diameter(mm)	:	1.2mm (0.045in)
Shielding Gas	:	100%CO_2
Flow Rate(ℓ /min.)	:	20
Amp./ Volt.	:	280 / 32
Stick-Out(mm)	:	20~25
Pre-Heat(℃)	:	R.T .
Interpass Temp.(℃)	:	150±15
Polarity	:	DCEP

❖ Mechanical Properties of the weld metal

Brand Name	Tensile Test Results			Charpy V-Notch Impact Value J (ft . lbs)
SM-70S	Y.S. MPa(ksi)	T.S. MPa(ksi)	EL.(%)	-20℃(-4°F)
	430 (62.4)	515 (74.7)	28.5	80 (59.0)
AWS A5.18 ER70S-3	≥ 400	≥ 480	≥ 22	≥27J at -20℃

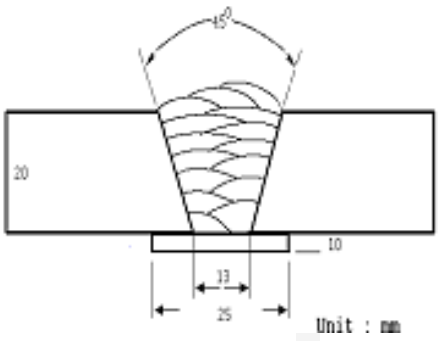
❖ Chemical Analysis of the weld metal(wt%)

Brand Name	C	Si	Mn	P	S
SM-70S	0.09	0.40	0.85	0.015	0.008
AWS A5.18 ER70S-3	No Spec.				

Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Rules



[Joint Preparation & Layer Details]

Diameter(mm)	:	1.2mm (0.045in)
Shielding Gas	:	Ar + 20%CO_2
Flow Rate(ℓ/min.)	:	20
Amp./ Volt.	:	280 / 30
Stick-Out(mm)	:	20~25
Pre-Heat(℃)	:	R.T .
Interpass Temp.(℃)	:	150±15
Polarity	:	DCEP

❖ Mechanical Properties of the weld metal

Brand Name	Tensile Test Results			Charpy V-Notch Impact Value J (ft . lbs)
SM-70	Y.S. MPa(ksi)	T.S. MPa(ksi)	EL.(%)	-20℃(-4°F)
	440 (63.8)	535 (77.6)	28.0	125 (92.2)
AWS A5.18 ER70S-6	≥ 400	≥ 480	≥ 22	≥27J at -20℃

❖ Chemical Analysis of the weld metal(wt%)

Brand Name	C	Si	Mn	P	S
SM-70	0.08	0.44	0.92	0.015	0.008
AWS A5.18 ER70S-6	No Spec.				

Proper Welding Condition

❖ Proper Current Range

Consumable	Welding Position	Wire Dia.(mm)		
		1.2mm	1.4mm	1.6mm
SM-70S	F & HF	80 ~ 350A	100 ~ 370A	170 ~ 390A
	V-up	50 ~ 160A	80 ~ 180A	-
	O.H	50 ~ 160A	80 ~ 180A	-

Chemical Composition of Wire

❖ Chemical Composition of Wire (Wt%)

Consumable	C	Si	Mn	P	S
SM-70S	0.07	0.65	1.14	0.015	0.010
AWS A5.18 ER70S-3	0.06~0.15	0.45~0.75	0.90~1.40	≤ 0.025	≤ 0.035

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