

# **SM-70G**

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



## ❖ Specification

*AWS A5.18* ER70S-G

*EN ISO 14341-A* G3Si1

## ❖ Applications

Fillet and horizontal fillet welding of construction machinery, structural Steels, bridges, ships.

## ❖ Characteristics on Usage

SM-70G is a solid MIG wire designed for flat and horizontal fillet welding and is to be used in a high current welding with CO<sub>2</sub> / Argon + CO<sub>2</sub> shielding gas, It benefits from a high deposition rate and excellent penetration. As this wire contains special elements, its weldability and impact values are excellent.

## ❖ Note on Usage

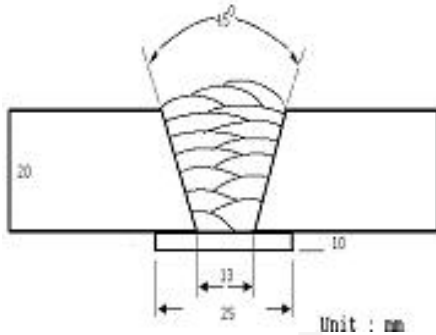
1. Use with CO<sub>2</sub> / Argon + 10~30%CO<sub>2</sub> gas.
2. Flow quantity of shielding gas should be 25ℓ/min. approximately.
3. Use wind screen against wind.
4. Keep distance between tip and base metal 6~15mm for less than 250A, and 15~25mm for more than 250A of welding current.



**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<sub>2</sub>
- Flow Rate(ℓ /min.)** : 20
- Amp./ Volt.** : 280 / 32
- Stick-Out(mm)** : 20~25
- Pre-Heat(℃)** : R.T .
- Interpass Temp.(℃)** : 150±15
- Polarity** : DC(+)

❖ **Mechanical Properties of the weld metal**

Brand Name	Tensile Test Results			Charpy V-Notch Impact Value J (ft . lbs)	
	Y.S. MPa(ksi)	T.S. MPa(ksi)	EL.(%)	0℃ (32°F)	-30℃ (-22°F)
SM-70G	460 (66.7)	560 (81.2)	29.0	155 (114)	90 (66)
AWS A5.18 ER70S-G	≥ 400	≥ 480	≥ 22	As agreed between supplier and purchaser	

❖ **Chemical Analysis of the weld metal(wt%)**

Brand Name	C	Si	Mn	P	S
SM-70G	0.07	0.52	1.07	0.015	0.009
AWS A5.18 ER70S-G	Not Specified				

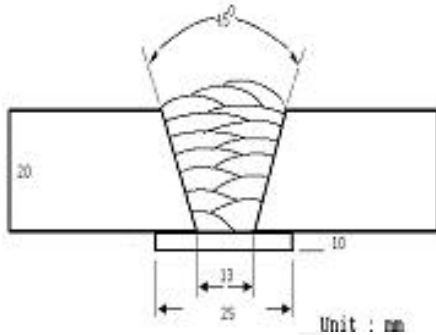
This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING 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.



## Mechanical Properties & Chemical Composition of All Weld Metal

### ❖ Welding Conditions

Method by AWS Rules



[ Joint Preparation & Layer Details ]

<b>Diameter(mm)</b>	: 1.2mm (0.045in)
<b>Shielding Gas</b>	: 80%Ar+20%CO <sub>2</sub>
<b>Flow Rate(ℓ /min.)</b>	: 20
<b>Amp./ Volt.</b>	: 280 / 30
<b>Stick-Out(mm)</b>	: 20~25
<b>Pre-Heat(°C)</b>	: R.T .
<b>Interpass Temp.(°C)</b>	: 150±15
<b>Polarity</b>	: DC(+)

### ❖ Mechanical Properties of the weld metal

Brand Name	Tensile Test Results			Charpy V-Notch Impact Value J (ft . lbs)	
	Y.S. MPa(ksi)	T.S. MPa(ksi)	EL.(%)	0°C (32°F)	-30°C (-22°F)
SM-70G	470 (68.2)	570 (82.7)	27.0	130 (96)	70 (52)
AWS A5.18 ER70S-G	≥ 400	≥ 480	≥ 22	As agreed between supplier and purchaser	

### ❖ Chemical Analysis of the weld metal(wt%)

Brand Name	C	Si	Mn	P	S
SM-70G	0.06	0.61	1.20	0.015	0.009
AWS A5.18 ER70S-G	Not Specified				

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# Proper Welding Condition

## ❖ Proper Current Range

Brand Name	Welding Position	Wire Dia. (mm)		
		1.2mm (0.045in)	1.4mm (0.052in)	1.6mm (1/16in)
SM-70G	Flat	200~350Amp	250~450Amp	300~550Amp
	H-Fillet	200~350Amp	250~450Amp	300~550Amp

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# Chemical Composition of Wire

## ❖ Chemical Composition of Wire (Wt%)

Brand Name	C	Si	Mn	P	S	Ti
SM-70G	0.06	0.82	1.53	0.013	0.010	0.20
AWS A5.18 ER70S-G	Not Specified					

### 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***

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