

SM-70GS

GAS METAL ARC WELDING CONSUMABLE
FOR WELDING OF MILD & 490MPa CLASS
HIGH TENSILE STEEL



❖ *Specification*

AWS A5.18

ER70S-G

❖ *Applications*

Butt and fillet welding of ships, steel structures and machinery

❖ *Characteristics on Usage*

SM-70GS is a solid wire designed for flat and fillet welding and is to be used with a high current welding with Ar + CO₂ mixed shielding gas.

As this wire contains special elements, its weldability and impact values are excellent.

❖ *Note on Usage*

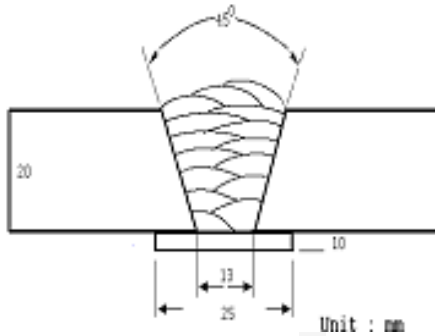
1. Use with Ar + 15~20%CO₂ gas.
2. Flow quantity of shielding gas should be 20ℓ/min. approximately.
3. Use wind screen against wind.
4. Keep distance between tip and base metal 6~15mm for less than 250A, and 15~25mm for more than 250A of welding current.



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

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

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			CVN Impact Test (Joule)
	YS(MPa)	TS(MPa)	EL(%)	-20°C
SM-70GS	480	550	28.0	90
AWS A5.18 ER70S-G	≥ 400	≥ 480	≥ 22	As agreed between supplier and purchaser

❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S
SM-70GS	0.08	0.38	1.00	0.014	0.008
AWS A5.18 ER70S-G	Not Specified				



Proper Welding Condition

❖ Proper Current Range

Consumable	Welding Position	Wire Dia. (mm)		
		1.2mm	1.4mm	1.6mm
SM-70GS	F & HF	80~300Amp	150~350Amp	200~390Amp
	Vertical Up	80~150Amp	-	-
	Over Head	80~150Amp	-	-



Chemical Composition of Wire

❖ *Chemical Composition of Wire (Wt%)*

Consumable	C	Si	Mn	P	S	Ti
SM-70GS	0.06	0.62	1.21	0.015	0.006	0.10
AWS A5.18 ER70S-G	Not Specified					