

SM-70S

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



❖ *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*

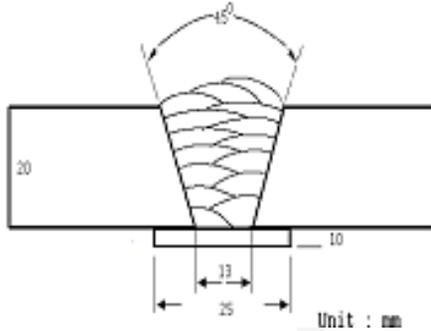
1. Use with CO₂ / Argon + 15~25% CO₂ gas.
2. Flow quantity of shielding gas should be 20ℓ/min. approximately.
3. Use wind screen against wind.
4. Keep distance between tip and base metal 6~15mm for less than 250A, and 15~25mm for more than 250A of welding current.



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Diameter(mm)	: 1.2mm
Shielding Gas	: 100%CO ₂
Flow Rate(ℓ /min.)	: 20
Amp./ Volt.	: 280 / 32
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℃
SM-70S	430	515	28.5	80
AWS A5.18 ER70S-3	≥ 400	≥ 480	≥ 22	≥ 27J at -20℃

❖ Chemical Analysis of all weld metal(wt%)

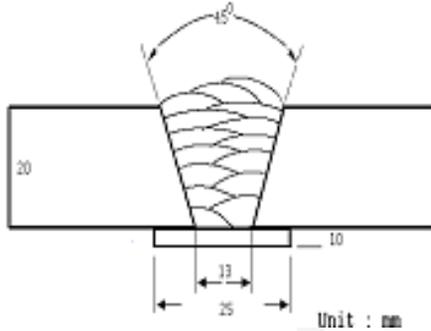
Consumable	C	Si	Mn	P	S
SM-70S	0.09	0.40	0.85	0.015	0.008
AWS A5.18 ER70S-3	Not Specified				



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℃
SM-70S	440	535	28.0	125
AWS A5.18 ER70S-3	≥ 400	≥ 480	≥ 22	≥ 27J at -20℃

❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S
SM-70S	0.08	0.44	0.92	0.015	0.008
AWS A5.18 ER70S-3	Not Specified				



Proper Welding Condition

❖ Proper Current Range

Consumable	Welding Position	Wire Dia. (mm)		
		1.2mm	1.4mm	1.6mm
SM-70S	F & HF	80~350Amp	100~370Amp	170~390Amp
	Vertical Up	50~160Amp	80~180Amp	-
	Over Head	50~160Amp	80~180Amp	-



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