

SF-70MX

FLUX CORED ARC WELDING CONSUMABLE
FOR WELDING OF MILD & 490MPa CLASS
HIGH TENSILE STEEL



❖ Specification

AWS A5.20

E70T-1C

EN ISO 17632-A

T 42 0 R C 3 H10

❖ Applications

Only Flat, H- Fillet welding of building, shipbuilding, bridge, machinery Vehicle using mild and 490Mpa class high tensile steels.

❖ Characteristics on Usage

SF- 70MX is widely used metal type flux cored wire for flat, H- Fillet welding with CO₂ shielding gas..

Compared with solid wire, spatter loss is low and bead appearance is beautiful and arc is soft with good stability and high efficiency.

❖ Note on Usage

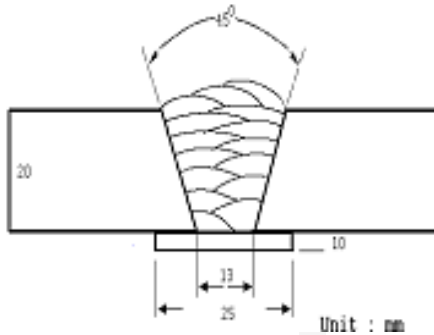
1. Proper preheating(50~ 150℃) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates
2. Use 100% CO₂ gas.



**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% CO₂
- 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(%)	0 °C	-20 °C
SF-70MX	560	590	28	60	50
AWS A5.20 E70T-1C	≥ 390	490~670	≥ 22	≥ 27J at -20 °C	

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

Consumable	C	Si	Mn	P	S
SF-70MX	0.05	0.50	1.50	0.011	0.013
AWS A5.20 E70T-1C	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03

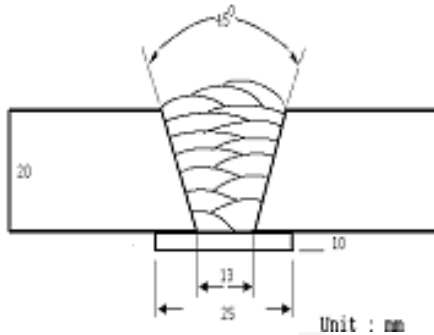
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**Mechanical Properties
& Chemical Composition of All Weld Metal**

❖ **Welding Conditions**

Method by AWS Spec.



[Joint Preparation & Layer Details]

Diameter (mm)	: 1.4mm
Shielding Gas	: 100% CO ₂
Flow Rate (ℓ / min.)	: 20
Amp. / Volt.	: 300 / 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(%)	0 °C	-20 °C
SF-70MX	555	595	28.5	65	55
AWS A5.20 E70T-1C	≥ 390	490~670	≥ 22	≥ 27J at -20 °C	

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

Consumable	C	Si	Mn	P	S
SF-70MX	0.06	0.52	1.50	0.012	0.012
AWS A5.20 E70T-1C	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03

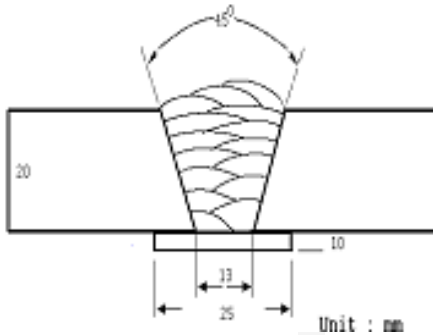
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**Mechanical Properties
& Chemical Composition of All Weld Metal**

❖ **Welding Conditions**

Method by AWS Spec.



[Joint Preparation & Layer Details]

- Diameter(mm) : **1.6mm**
- Shielding Gas : 100% CO₂
- Flow Rate(ℓ /min.) : 20
- Amp./ Volt. : 330 / 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(%)	0°C	-20°C
SF-70MX	555	590	27.5	60	50
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❖ **Chemical Analysis of all weld metal(wt%)**

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SF-70MX	0.06	0.50	1.52	0.014	0.011
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Welding Efficiency

❖ Deposition Rate & Efficiency

Consumable (size)	Welding Conditions		Deposition Efficiency(%)	Deposition Rate(kg/hr)
	Amp.(A)	Volt.(V)		
SF-70MX 1.2mm	200	26	85~87	3.5
	250	30	87~89	4.7
	300	33	91~93	6.3
	350	38	91~93	7.1
SF-70MX 1.4mm	300	31	90~92	5.1
	350	36	91~93	5.8
	400	35	91~93	6.5
SF-70MX 1.6mm	300	33	87~89	4.8
	350	36	90~91	5.4
	400	38	90~91	6.2
	450	42	91~92	7.8
Remark			Deposition efficiency =(Deposited metal weight/ Wire weight used)×100	Deposition rate =(Deposited metal weight/ Welding time,min.)×60

* Shielding Gas : 100% CO₂



Diffusible Hydrogen Content

❖ Welding Conditions

Diameter(mm)	: 1.4	Amps(A) / Volts(V)	: 300 / 32
Shielding Gas	: 100% CO ₂	Stick-Out(mm)	: 20~ 25
Flow Rate(ℓ /min.)	: 20	Welding Speed	: 30 cpm
Welding Position	: 1G	Current Type & Polarity	: DC(+)

❖ Hydrogen Analysis Using Gas Chromatography Method

Hydrogen Evolution Time	: 72 hrs	Analysis Temp.	: 25 °C
Evolution Temp.	: 25 °C	Exposure Condition	: 80%RH- 25 °C
Barometric Pressure	: 780 mm- Hg		

❖ Result(ml/100g Weld Metal)

X1	X2	X3	X4
5.3	5.4	5.2	5.3

Average Hydrogen Content 5.3 ml / 100g Weld Metal



Proper Welding Condition

❖ Proper Current Range

Consumable	Shielding Gas	Welding Position	Wire Dia. (mm)		
			1.2mm	1.4mm	1.6mm
SF-70MX	100%CO ₂	F & HF	250~300Amp	300~350Amp	300~350mp

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Approvals

❖ Shipping Approvals

Welding Position	Register of shipping & Size(mm)						
	KR	ABS	LR	BV	DNV	GL	NK
F, HF	2SMG, 2YSMG ©H10 1.2~1.6	2SAH10, 2YSA 1.2~1.6	2S, 2YSH10 1.2~1.6	SA2,2YMHH A2,2YMHH 1.2~1.6	IIYMSH10 1.2~1.6	2YSH10 1.2~1.6	KSW52G©H10 KAW52MG©H10 1.2~1.6

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