

# **Supercored 70MXH**

METAL CORED WIRE FOR HIGH SPEED  
TWIN SINGLE & TWIN TANDEM WELDING.



## ❖ Specification

**AWS A5.20** E70T-1C

**EN ISO 17632-A** T 42 2 R C 3 H5

## ❖ Applications

Supercored 70MXH is a metal type flux cored wire for high speed welding application in the flat and horizontal fillet position.

This wire benefits from high deposition rate and is widely used for shipbuilding, construction of bridge and structure fabrication for 490N/mm<sup>2</sup> class high tensile steel welding

## ❖ Characteristics on Usage

Supercored 70MXH has very low spatter loss rate and minimum amount of slag. It gives excellent penetration and good arc stability.

Especially it has good anti-porosity to zinc-primer plate and rusty plate in high speed twin single and twin tandem welding.

## ❖ Note on Usage

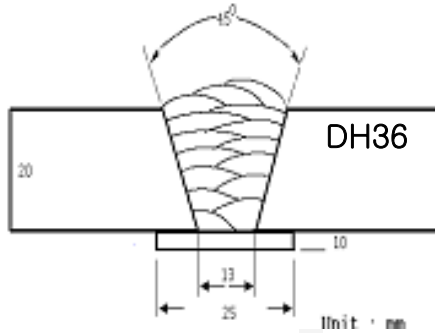
1. Proper preheating(50~150℃) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates
2. Use 100% CO<sub>2</sub> gas.



## Mechanical Properties & Chemical Composition of All Weld Metal

### ❖ Welding Conditions

Method by AWS Spec.



[ Joint Preparation & Layer Details ]

<b>Diameter(mm)</b>	: 1.4mm
<b>Shielding Gas</b>	: 100%CO <sub>2</sub>
<b>Flow Rate(l /min.)</b>	: 20
<b>Amp./ Volt.</b>	: 300 / 32
<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 all weld metal

Consumable	Tensile Test			CVN Impact Test (Joule)	
	YS(MPa)	TS(MPa)	EL(%)	0°C	-20°C
<b>Supercored 70MXH</b>	565	620	26.5	101	72
<b>AWS A5.20 E70T-1C</b>	≥ 390	490~670	≥ 22	≥ 27J at -20°C	

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

Consumable	C	Si	Mn	P	S
<b>Supercored 70MXH</b>	0.067	0.55	1.65	0.014	0.008
<b>AWS A5.20 E70T-1C</b>	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03

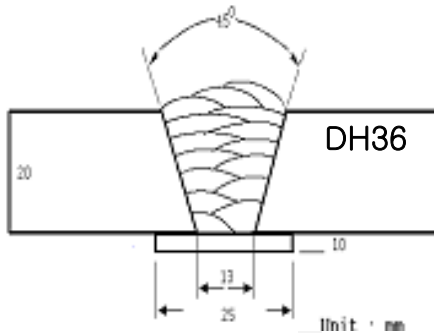
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## Mechanical Properties & Chemical Composition of All Weld Metal

### ❖ Welding Conditions

Method by AWS Spec.



[ Joint Preparation & Layer Details ]

Diameter(mm)	: 1.6mm
Shielding Gas	: 100%CO <sub>2</sub>
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
Supercored 70MXH	550	605	27.0	98	65
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
Supercored 70MXH	0.065	0.52	1.60	0.014	0.008
AWS A5.20 E70T-1C	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03



## Welding Efficiency

### ❖ Deposition Rate & Efficiency

Consumable (Size)	Welding Conditions		Deposition Efficiency(%)	Deposition Rate(kg/hr)
	Amp.(A)	Volt.(V)		
Supercored 70MXH  1.4mm	300	31	90~92	5.2
	350	36	91~93	5.9
	400	35	91~93	6.4
Supercored 70MXH  1.6mm	300	33	87~89	4.9
	350	36	90~91	5.3
	400	38	90~91	6.4
	450	42	91~92	7.7
Remark			Deposition efficiency =(Deposited metal weight/ Wire weight used)×100	Deposition rate =(Deposited metal weight/ Welding time,min.)×60

\* Shielding Gas : 100%CO<sub>2</sub>



## Diffusible Hydrogen Content

### ❖ Welding Conditions

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Diameter(mm)	: 1.6	Amps(A) / Volts(V)	: 330 / 32
Shielding Gas	: 100%CO <sub>2</sub>	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

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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)

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X1	X2	X3	X4
4.3	4.4	4.2	4.3

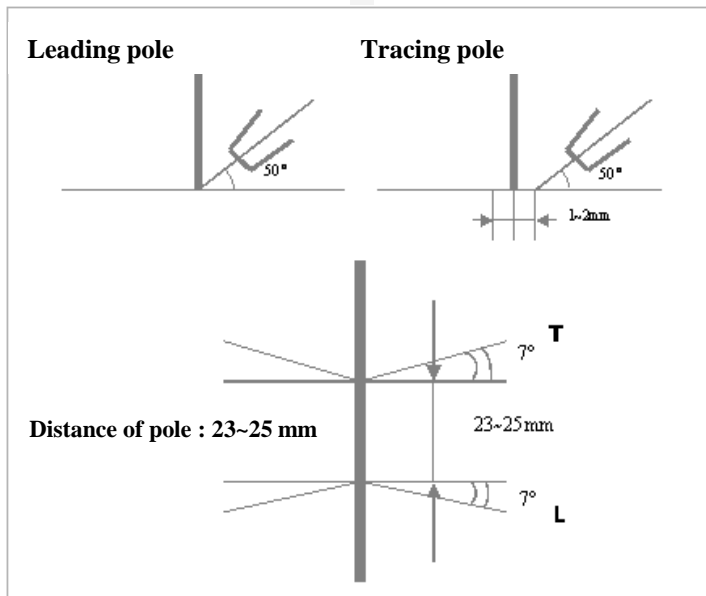
**Average Hydrogen Content 4.3 ml / 100g Weld Metal**



## Proper Welding Condition

### ❖ Proper Current Range

Welding Position (H-Fillet)	Wire Dia. (mm)					
	1.4mm			1.6mm		
	Twin Single Welding					
Welding Speed	40	50	60	50	60	70
Welding Current(Amp)	300~350	300~350	350~380	300~350	350~380	350~400
	Twin Tandem Welding					
Welding Speed	80	100	120	100	120	150
Welding Current(Amp)	L : 320~400A (360A 28V) T : 280~350A (300A 32V)			L : 350~450A (380A 29V) T : 280~350A (330A 32V)		





## Approvals

### ❖ Shipping Approvals

Welding Position	Resister of shipping & Size(mm)						
	KR	ABS	LR	BV	DNV	GL	NK
F HF	RSW53G(C) HHH RAW53MG(C) HHH 1.4~2.0	3SAH5 3YSA  1.4~2.0	3YSH5  1.2~2.0	SA3YM, SA3YMHHH  1.2~2.0	IIIYMSH5  1.2~2.0	3YH5S  1.2~2.0	KSW53G(C)H5 KAW53MG(C) H5 1.2~2.0

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