

Supercored 71

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

HYUNDAI WELDING CO., LTD.



Supercored 71

❖ **Specification**

AWS A5.20

E71T-1C

EN ISO 17632-A

T 42 2 P C 1 H10

❖ **Applications**

All position welding of machinery, shipbuilding, bridges. Impact values of weld metal are good.

❖ **Characteristics on Usage**

Supercored 71 is a flux cored wire which has been designed to get a good usability in all position for wide range of welding currents. With its quiet and smooth arc, its slag detachability is very good.

❖ **Note on Usage**

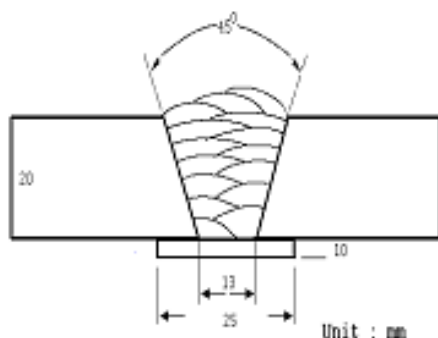
1. Proper preheating(50~ 150℃) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
2. One- side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
3. 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%CO ₂
Flow Rate(ℓ /min.)	: 20~ 22
Amp./ Volt.	: 280 / 31
Stick-Out(mm)	: 20~ 25
Pre-Heat(℃)	: R.T .
Interpass Temp.(℃)	: 150± 15
Polarity	: DC(+)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			CVN Impact Test (Joule)	
	YS(MPa)	TS(MPa)	EL(%)	0℃	-20℃
Supercored 71	545	572	28	110	70
AWS A5.20 E71T-1C	≥ 390	490~670	≥ 22	≥ 27J at -20℃	

❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S
Supercored 71	0.03	0.51	1.26	0.010	0.011
AWS A5.20 E71T-1C	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03

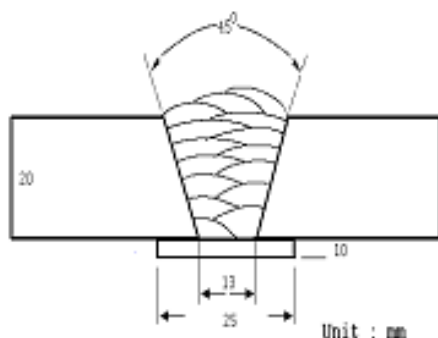
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Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Diameter(mm)	: 1.4mm
Shielding Gas	: 100%CO ₂
Flow Rate(ℓ /min.)	: 20~ 22
Amp./ Volt.	: 300 / 32
Stick-Out(mm)	: 20
Pre-Heat(℃)	: R.T .
Interpass Temp.(℃)	: 150±15
Polarity	: DC(+)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			CVN Impact Test (Joule)	
Supercored 71	YS(MPa)	TS(MPa)	EL(%)	0℃	-20℃
	548	576	28	128	81
AWS A5.20 E71T-1C	≥ 390	490~670	≥ 22	≥ 27J at -20℃	

❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S
Supercored 71	0.038	0.50	1.28	0.010	0.011
AWS A5.20 E71T-1C	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03

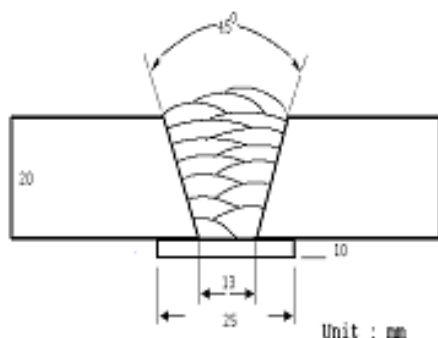
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Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Diameter(mm)	: 1.6mm
Shielding Gas	: 100%CO ₂
Flow Rate(ℓ /min.)	: 20~ 22
Amp. / Volt.	: 330 / 33
Stick-Out(mm)	: 20
Pre-Heat(℃)	: R.T .
Interpass Temp.(℃)	: 150±15
Polarity	: DC(+)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			CVN Impact Test (Joule)	
Supercored 71	YS(MPa)	TS(MPa)	EL(%)	0℃	-20℃
	551	586	27.5	105	66
AWS A5.20 E71T-1C	≥ 400	490~670	≥ 22	≥ 27J at -20℃	

❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S
Supercored 71	0.033	0.49	1.30	0.011	0.010
AWS A5.20 E71T-1C	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03

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Welding Efficiency

❖ Deposition Rate & Efficiency

Consumable (size)	Welding Conditions		Deposition Efficiency(%)	Deposition Rate(kg/hr)
	Amp.(A)	Volt.(V)		
Supercored 71 1.2mm	150	24	84~86	2.4
	200	26	84~87	3.4
	250	28	85~88	4.5
	300	33	86~88	5.2
Supercored 71 1.4mm	250	28	85~87	3.9
	300	32	85~88	4.8
	350	36	86~89	5.8
Supercored 71 1.6mm	280	31	85~88	4.2
	330	33	86~88	4.8
	350	34	87~89	5.3
	400	38	87~90	5.7
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)	:	1.2	Amps(A) / Volts(V)	:	280 / 31
Shielding Gas	:	100%CO ₂	Stick-Out(mm)	:	20
Flow Rate(ℓ /min.)	:	20	Welding Speed	:	45 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	5.4	5.4

Average Hydrogen Content 5.4 ml / 100g Weld Metal



Proper Welding Condition

❖ Proper Current Range

Consumable	Shielding Gas	Welding Position	Wire Dia. (mm)		
			1.2mm	1.4mm	1.6mm
Supercored 71	100%CO ₂	F & HF	120~300Amp	150~350Amp	180~400Amp
		V-Up & OH	120~260Amp	140~270Amp	160~280mp
		V-Down	200~300Amp	220~320Amp	250~300Amp

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Approvals

❖ Shipping Approvals

Welding Position	Register of shipping & Size(mm)						
	KR	ABS	LR	BV	DNV	GL	NK
All V- Down	3SMG, 3YSMG ©H10	3SAH10, 3YSA	3S, 3YSH10	SA3M,3YMHH A3M,3YMHH	IIIYMSH10	3YH10S	KSW53G©H10 KAW53MG©H10
	0.9~ 1.6	0.9~ 1.6	0.9~ 1.6	0.9~ 1.6	0.9~ 1.6	0.9~ 1.6	0.9~ 1.6

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