

Supercored 71H

FLUX CORED ARC WELDING CONSUMABLES
FOR WELDING OF Mild & 490Mpa CLASS
HIGH TENSILE STEEL



❖ Specification

AWS A5.20

E71T-1C/ -9C/ -9CJ

EN ISO 17632-A-

T 42 4 P C 1H5

❖ Applications

All position welding of shipbuilding, bridge, building and structural Fabrications.

❖ Characteristics on Usage

Supercored 71H is a titania flux cored wire for all position welding with high amperage.

Its impact value is very good under high heat input, arc is smooth and slag detachability is excellent.

❖ Note on Usage

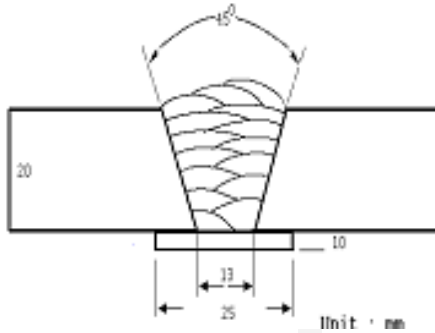
1. Proper preheating(50~150℃) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates
2. One-side welding defect such as hot cracking may occur with welding parameter such as high welding speed.
3. Use 100% CO₂ gas.



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Rules



[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 the weld metal

Brand Name	Tensile Test Results			Charpy V-Notch Impact Value (Joules)	
	YS(MPa)	TS(MPa)	EL(%)	-30°C	-40°C
Supercored 71H	550	590	27	140	105
AWS A5.20 E71T-1C/-9C/-9CJ	≥ 390	490~670	≥ 22	≥ 27J at -40°C	

❖ Chemical Analysis of the weld metal(wt%)

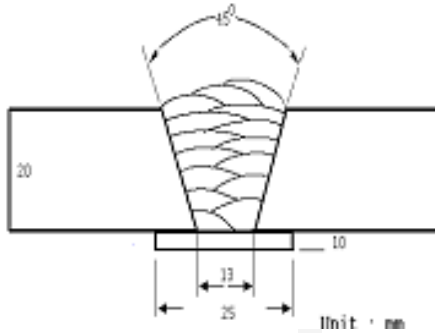
Brand Name	C	Si	Mn	P	S	Ni
Supercored 71H	0.03	0.46	1.36	0.008	0.011	0.39
AWS A5.20 E71T-1C/-9C/-9CJ	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03	≤ 0.5



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Rules



[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 the weld metal

Brand Name	Tensile Test Results			Charpy V-Notch Impact Value (Joules)	
	YS(MPa)	TS(MPa)	EL(%)	-30℃	-40℃
Supercored 71H	550	590	27.0	145	100
AWS A5.20 E71T-1C/-9C/-9CJ	≥ 390	490~670	≥ 22	≥ 27J at -40℃	

❖ Chemical Analysis of the weld metal(wt%)

Brand Name	C	Si	Mn	P	S	Ni
Supercored 71H	0.04	0.45	1.35	0.009	0.012	0.40
AWS A5.20 E71T-1C/-9C/-9CJ	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03	≤ 0.5

This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING CO., LTD. affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.



Welding Efficiency

❖ Deposition Rate & Efficiency

Consumables	Welding Conditions		Deposition Efficiency(%)	Deposition Rate(kg/hr)
	Amp.(A)	Volt.(V)		
Supercored 71H 1.2mm	200	26	85~86	3.8
	280	32	86~87	5.5
	320	35	87~88	6.3
Supercored 71H 1.4mm	230	26	85~86	3.5
	300	32	87~88	4.9
	350	36	87~88	6.0
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 Chromatograph 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
3.5	3.4	3.5	3.3

Average Hydrogen Content 3.4 ml / 100g Weld Metal



Proper Welding Condition

❖ Proper Current Range

Consumables	Shielding Gas	Welding Position	Wire Dia. (mm)		
			1.2mm	1.4mm	1.6mm
Supercored 71H	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



Approvals

❖ Shipping Approvals

Welding Position	Register of shipping & Size(mm)						
	KR	ABS	LR	BV	DNV	GL	NK
All V-Down	4YSMG(C) H10 1.2~1.4 3YSMG(C) H10 1.6	4YSAH10 1.2~1.4 3SAH10 1.6	4YSH10 1.2~1.4	SA4YM HH 1.2~1.4 SA3YM HH 1.6	IVYSM H10 1.2~1.4 IIII YMS H10 1.6	4YS H10 1.2~1.4 3YS H10 1.6	KSW54G(C) H10 1.2~1.4 KSW53G(C) H10 1.6