

SC-71LHM Cored

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

2024.12

HYUNDAI WELDING CO., LTD.



SC-71LHM Cored

❖ Specification

AWS A5.20 E71T-1M,-9M

(AWS A5.20M) E491T-1M,-9M)

EN ISO 17632-A T46 3 P M21 1 H5

JIS Z3313 T49 3 T1-1 M A-U

AWS D1.8

Wire Dia. mm(in)		
1.2(0.045)	1.4(0.052)	1.6(1/16)

* AWS D1.8 is available upon request

❖ Applications

Typical industrial application include shipbuilding, machinery. Bridges and structural fabrications.

❖ Characteristics on Usage

SC-71LHM Cored is extra low hydrogen(H5) type flux cored wire for all position welding. Provide an exceptionally smooth and stable arc With a fast freezing slag system.

❖ Note on Usage

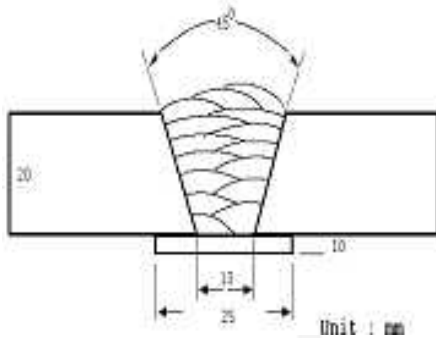
1. For preheating guidelines, please refer to your local standards and codes relative to your best practices.
2. One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
3. Use Ar-20~25%CO₂ gas.



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Welding Position	: 1G(PA)
Diameter	: 1.2mm (0.045in)
Shielding Gas	: Ar-20%CO ₂
Flow Rate	: 20 ℓ /min
Amp / Volt	: 270~280A / 29~30V
Stick-Out	: 20~25mm (0.79~0.98in)
Pre-Heat	: R.T .
Interpass Temp.	: 150±15℃ (302±59°F)
Polarity	: DC(+)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			CVN Impact Test J(ft · lbs)	
	YS MPa (lbs/in ²)	TS MPa (lbs/in ²)	EL (%)	-18℃ (0°F)	-29℃ (-20°F)
SC-71LHM Cored	580 (84,000)	600 (87,000)	28.0	95 (70)	80 (59)
AWS A5.20 E71T1-1M,-9M	≥ 390 (56,000)	490~670 (70,000~97,000)	≥ 22	≥ 27J at -29℃ (≥ 20ft · lbs at -20°F)	

❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S
SC-71LHM Cored	0.05	0.50	1.20	0.012	0.015
AWS A5.20 E71T1-1M,-9M	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03

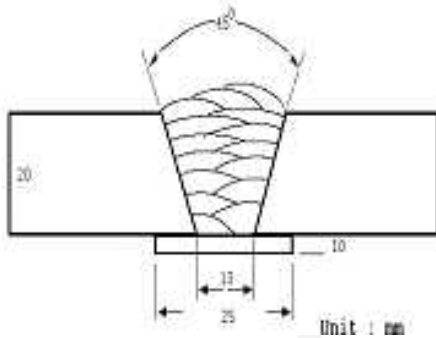
This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING 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.



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Welding Position	: 1G(PA)
Diameter	: 1.4mm (0.052in)
Shielding Gas	: Ar-20%CO ₂
Flow Rate	: 20 ℓ /min
Amp / Volt	: 290~300A / 29~30V
Stick-Out	: 20~25mm (0.79~0.98in)
Pre-Heat	: R.T .
Interpass Temp.	: 150±15℃ (302±59°F)
Polarity	: DC(+)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			CVN Impact Test J(ft · lbs)	
	YS MPa (lbs/in ²)	TS MPa (lbs/in ²)	EL (%)	-18℃ (0°F)	-29℃ (-20°F)
SC-71LHM Cored	580 (84,000)	603 (87,000)	28.3	97 (72)	82 (61)
AWS A5.20 E71T1-1M,-9M	≥ 390 (56,000)	490~670 (70,000~97,000)	≥ 22	≥ 27J at -29℃ (≥ 20ft · lbs at -20°F)	

❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S
SC-71LHM Cored	0.05	0.50	1.21	0.012	0.015
AWS A5.20 E71T1-1M,-9M	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03

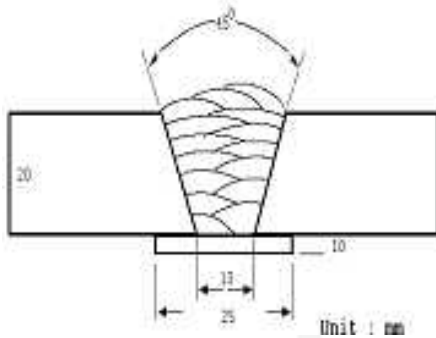
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Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Welding Position	: 1G(PA)
Diameter	: 1.4mm (0.052in)
Shielding Gas	: Ar-20%CO ₂
Flow Rate	: 20 ℓ /min
Amp / Volt	: 290~300A / 29~30V
Stick-Out	: 20~25mm (0.79~0.98in)
Pre-Heat	: R.T .
Interpass Temp.	: 150±15℃ (302±59°F)
Polarity	: DC(+)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			CVN Impact Test J(ft · lbs)	
	YS MPa (lbs/in ²)	TS MPa (lbs/in ²)	EL (%)	-18℃ (0°F)	-29℃ (-20°F)
SC-71LHM Cored	582 (84,000)	604 (88,000)	28.1	98 (72)	85 (63)
AWS A5.20 E71T1-1M,-9M	≥ 390 (56,000)	490~670 (70,000~97,000)	≥ 22	≥ 27J at -29℃ (≥ 20ft · lbs at -20°F)	

❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S
SC-71LHM Cored	0.05	0.50	1.22	0.011	0.015
AWS A5.20 E71T1-1M,-9M	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03

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Welding Efficiency

❖ Deposition Rate & Efficiency

Consumable (size)	Welding Conditions		Wire Feed Speed m/min (in/min)	Deposition Efficiency %	Deposition Rate kg/hr(lb/hr)
	Amp.(A)	Volt.(V)			
SC-71LHM Cored 1.2 mm (0.045in)	200	26	10.2 (400)	87~89	3.1 (6.8)
	250	28	11.5 (450)	88~89	4.3 (9.5)
	300	32	15.3 (600)	88~90	5.8 (12.8)
SC-71LHM Cored 1.4 mm (0.052in)	250	28	7.6 (300)	85~87	3.6 (7.9)
	300	32	10.2 (400)	86~88	4.7 (10.3)
	330	36	12.8 (500)	87~89	6.3 (13.9)
SC-71LHM Cored 1.6 mm (1/16in)	280	31	6.4 (250)	86~88	4.0 (8.8)
	330	33	7.6 (300)	86~89	4.6 (10.1)
	350	34	8.1 (320)	87~89	5.6 (12.3)
	400	38	9.2 (360)	88~90	6.5 (14.3)
Remark				Deposition efficiency =(Deposited metal weight / Wire weight used)×100	Deposition rate =(Deposited metal weight / Welding time,min.)×60

* Shielding Gas : Ar-20%CO₂



Diffusible Hydrogen Content

❖ Welding Conditions

Diameter	: 1.2mm (0.045in)	Amps / Volts	: 230A / 24V
Shielding Gas	: Ar-20%CO ₂	Stick-Out	: 20~25mm (0.79~0.98in)
Flow Rate	: 20 l /min	Welding Speed	: 30 cm/min (12 in/min)
Welding Position	: 1G (PA)	Current Type & Polarity	: DC(+)

❖ Hydrogen Analysis Using Gas Chromatography Method

Hydrogen Evolution Time	: 72 hrs
Evolution Temp.	: 45 °C (113°F)
Barometric Pressure	: 780 mm-Hg

❖ Result(ml/100g Weld Metal)

X1	X2	X3	X4
4.2	4.4	4.7	4.8

Average Hydrogen Content *4.5 ml / 100g Weld Metal*



Proper Welding Condition

❖ Proper Current Range

Consumable	Shielding Gas	Welding Position	Wire Dia.		
			1.2mm (0.045in)	1.4mm (0.052in)	1.6mm (1/16in)
SC-71LHM Cored	Ar -20%CO ₂	F & HF	110~280 Amp	110~280 Amp	120~300 Amp
		V-Up & OH	110~240 Amp	110~260 Amp	120~280 Amp
		V-Down	110~280 Amp	110~280 Amp	120~300 Amp

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Approvals

❖ AUTHORIZED APPROVAL DETAILS

Welding Position	Register of shipping & Size					
	KR	ABS	LR	BV	DNV	NK
All V-Down	-	3YSA H5 1.2~1.6mm (0.045~1/16in)	3YS H5 1.2~1.6mm (0.045~1/16in)	SA3Y HHH 1.2~1.6mm (0.045~1/16in)	3YMS H5 1.2~1.6mm (0.045~1/16in)	-

❖ F No & A No

F No	A No
6	1