

Rev. 06



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

2022.02

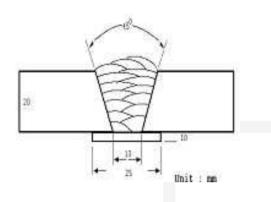
HYUNDAI WELDING CO., LTD.

		<i>SF-71LF</i>
Specification	AWS A5.20	E71T-1C
	(AWS A5.20M	E491T-1C)
	JIS Z 3313	T49J 0 T1-1 C A-U
Applications		f ship buildings, machinery, bridges, building, nd higher strength steels.
Characteristics on Usage	CO ₂ . Compared with is a beautiful and a	type flux cored wire for all position welding with solid wire, spatter loss is low, bead appearance rc is soft with good stability. Slag covering is removal. As fume generation is lower than ed wire
Note on Usage	1. For preheating guid codes relative to ye	delines, please refer to your local standards and our best practices.
	-	defects such as hot cracking may occur with ameter such as high welding speed.
	3. Use 100% CO ₂ ga	as.

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Mechanical Properties & Chemical Composition of All Weld Metal

Welding Conditions



[Joint Preparation & Layer Details]

M	ethod by AWS Spec.
Welding Position Diameter	∶ 1G(PA) ∶ 1.2mm (0.045in)
Shielding Gas	: 100%CO ₂
Flow Rate	: 20 l /min
Amp./ Volt.	: 280A / 32V
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	-	CVN Impact Tes J(ft · Ibs)			
SF-71LF	YS MPa (Ibs/in²)	TS MPa (Ibs/in²)	EL (%)	−1 ℃ (30°F)	−18 ℃ (0°F)
	550 (80,000)	588 (85,000)	27.0	95(70)	55(41)
AWS A5.20 E71T-1C			≥ 22		at –18℃ bs at 0°F)

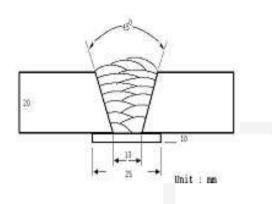
Chemical Analysis of all weld metal(wt%)

Consumable	С	Si	Mn	Р	S
SF-71LF	0.04	0.50	1.45	0.010	0.008
AWS A5.20 E71T-1C	≤ 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



[Joint Preparation & Layer Details]

Me	ethod by AWS Spec.
Welding Position Diameter Shielding Gas	: 1G(PA) : 1.4mm (0.052in) : 100%CO₂
Flow Rate	: 20 l /min
Amp./ Volt.	: 300A / 32V
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	-	Fensile Test	CVN Impact Test J(ft · Ibs)		
SF-71LF	YS MPa (Ibs/in²)	TS MPa (Ibs/in²)	EL (%)	−1 ℃ (30°F)	−18℃ (0°F)
	545 (79,000)	585 (85,000)	27.5	92(68)	49(36)
AWS A5.20 E71T-1C	≥ 390 (56,000)	490~670 (70,000~ 97,000)	≥ 22	≥27J a (≥20ft · I	it –18℃ bs at 0°F)

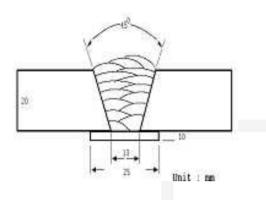
Chemical Analysis of all weld metal(wt%)

Consumable	С	Si	Mn	Р	S
SF-71LF	0.04	0.53	1.46	0.010	0.008
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



[Joint Preparation & Layer Details]

Welding Position	: 1G(PA)
Diameter	: 1.6mm (1/16in)
Shielding Gas	: 100%CO ₂
Flow Rate	: 20 l /min
Amp./ Volt.	: 320~330A / 29~30V
Stick-Out	: 20~25mm (0.79~0.98ir
Pre-Heat	: R.T.
Interpass Temp.	: 150±15℃ (302±59°F)
Polarity	: DC(+)

Method by AWS Spec.

Mechanical Properties of all weld metal

Consumable	1	ſensile Test	CVN Impact Test J(ft · Ibs)		
SF-71LF	YS MPa (lbs/in²)	TS MPa (Ibs/in²)	EL (%)	−1 ℃ (30°F)	-18℃ (0°F)
	555 (80,000)	595 (86,000)	27.8	95(70)	52(38)
AWS A5.20 E71T-1C	≥ 390 (56,000)	490~670 (70,000~ 97,000)	≥ 22		at –18℃ bs at 0°F)

Chemical Analysis of all weld metal(wt%)

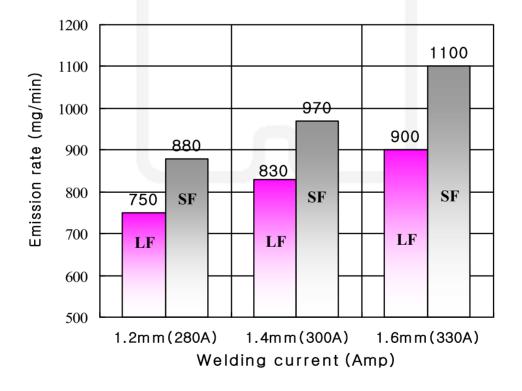
Consumable	с	Si	Mn	Р	S
SF-71LF	0.04	0.52	1.44	0.011	0.008
AWS A5.20 E71T-1C	≤ 0.12	≤ 0.9	≤ 1.75	≤ 0.03	≤ 0.03

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Fume Generation Rate

Welding Conditions

Diameter	:	1.2, 1.4, 1.6mm (0.045, 0.053, 1/16in)	Amps Stick-Out	:	280, 300, 330A 20mm ((0.79in)
Shielding Gas	:	100% CO ₂	Welding Speed	:	30 cm/min
Flow Rate Welding Position	:	20 <i>l</i> /min 1G	Current Type & Polarity	:	(12 in/min) DC(+)
Fume Suction time	:	Total 3min.	Welding Time	:	30sec.
Torch Angle	:	90 °(deg)			



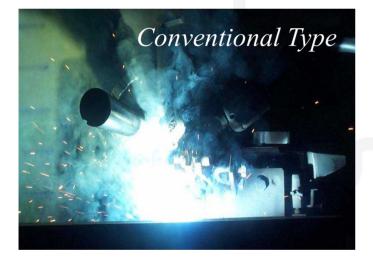
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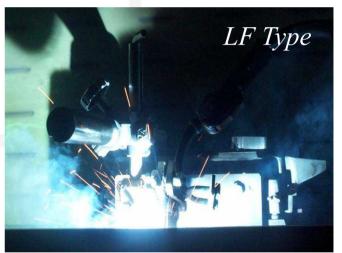
SF-71LF

Fume Generation Rate

Welding Conditions

Diameter	:	1.2mm (0.045in)	Amps / Volts	:	280A / 31V
Shielding Gas	:	100% CO ₂	Stick-Out(mm)	:	20mm ((0.79in)
Flow Rate	:	20 ℓ /min	Welding Speed	:	30 cm/min
Welding Position	:	1G			(12 in/min)
Fume Suction time	:	Total 3min.	Current Type & Polarity	:	DC(+)
Torch Angle	:	90 °(deg)	Welding Time	:	30sec.





SF-71

SF-71 LF

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Diffusible Hydrogen Content

Welding Conditions

Diameter	: 1.2mm (0.045in)	Amps(A) / Volts(V)	:	240A / 27V
Shielding Gas	: 100%CO ₂	Stick-Out	:	20~25mm (0.79~0.98in)
Flow Rate	: 20 ℓ /min			
Welding Position	: 1G (PA)	Welding Speed	:	30 cm/min (12 in/min)
		Current Type & Polarity	:	DC(+)

Hydrogen Analysis Using Gas Chromatography Method

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

Result(ml/100g Weld Metal)

X1	X2	X3	X4
5.8	5.4	5.9	5.2

Average Hydrogen Content 5.6 ml / 100g Weld Metal

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Proper Welding Condition

Proper Current Range

Consumable Gas	Shielding	Welding Position	Wire Dia.		
	Gas		1.2mm (0.045in)	1.4mm (0.052in)	1.6mm (1/16in)
SF-71LF 100%CO ₂		F & HF	120~300Amp	200~350Amp	200~400Amp
	100%CO ₂	V-Up & OH	120~260Amp	180~280Amp	180~280mp
		V-Down	200~300Amp	220~320Amp	250~320Amp

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Approvals

*** AUTHORIZED APPROVAL DETAILS**

Welding	Register of shipping & Size				
Position	ABS	LR	DNV	NK	
All	2YSAH10,	2YSH10	IIYMSH10	KSW52G(C)H10 KAW52MG(C)	
V-Down	1.2~1.6mm (0.045~1/16in)	1.2~1.6mm (0.045~1/16in)	1.2~1.6mm (0.045~1/16in)	1.2~1.6mm (0.045~1/16in)	

F No & A No

F No	A No
6	1

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