HYUNDAI WELDING

Rev. 00

SL-70ML

SEAMLESS METAL CORED ARC WELDING CONSUMABLES
FOR Mild & 490MPa CLASS HIGH TENSILE STEEL

2024.05

HYUNDAI WELDING CO., LTD.

SL-70ML

❖ Specification

AWS A5.18	E70C-6M H4
(AWS A5.18M	E48C-6M)
EN ISO 17632-A	T46 4 M M21 1 H5

❖ Applications

Structural fabrication and building, machinery, bridge, shipbuilding, trailer fabrication, heavy equipment.

❖ Characteristics on Usage

SL-70ML is a seamless metal-cored wire which combines the high deposition rates of a flux cored wire with the high efficiencies of a solid wire. SL-70ML is recommended for welding of carbon steel having tensile strengths up to 490MPa Provide an exceptionally smooth and stable arc, low spatter and minimal slag coverage in welding. SL-70ML of low diffusible hydrogen level prevents the weld from hydrogen induced cracking or cold cracking.

❖ Note on Usage

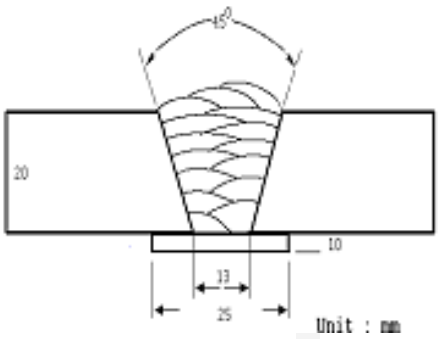
1. Proper preheating(50~150℃, 122~302°F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.

2. Use Ar-20~25%CO_2 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	:	80%Ar + 20%CO_2
Flow Rate	:	20 ℓ /min
Amp./ Volt.	:	280A/ 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/in²)	TS MPa(lbs/in²)	EL (%)	-30℃ (-20°F)	-40℃ (-40°F)
SL-70ML	490(71,000)	556(80,000)	30.5	120(89)	80(59)
AWS A5.18 E70C-6M	≥ 400 (58,000)	≥ 480 (70,000)	≥ 22	≥27J at -30℃ (≥20ft · lbs at -20°F)	

❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S
SL-70ML	0.032	0.47	1.31	0.008	0.004
AWS A5.18 E70C-6M	≤ 0.12	≤ 0.90	≤ 1.75	≤ 0.030	≤ 0.030

Diffusible Hydrogen Content

❖ Welding Conditions

Diameter	:	1.2mm (0.045in)	**Amps / Volts**	:	280A / 30V
Shielding Gas	:	80%Ar +20%CO2	**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 ℃ (113˚F)
Barometric Pressure	:	780 mm-Hg

❖ Result(㎖/100g Weld Metal)

X1	X2	X3	X4
2.1	1.7	2.0	1.8

Average Hydrogen Content 1.9 *㎖ / 100g Weld Metal*

Proper Welding Condition

❖ Proper Current Range

Consumable	Shielding Gas	Item	Wire Dia.
			1.2mm (0.045in)
SL-70ML	Ar +20%CO_2	Amp.(A)	200~300
		Volt.(V)	22~30

❖ F No & A No

F No	A No
6	1