



HYUNDAI
W E L D I N G

Rev. 00

SC-110M Cored

METAL CORED ARC WELDING CONSUMABLE
FOR WELDING OF 760MPa CLASS
HIGH TENSILE STEEL

HYUNDAI WELDING CO., LTD.



SC-110M Cored

❖ **Specification**

AWS A5.28

E110C-G

EN ISO 18276-A

T 69 4 Mn2NiMo M M 3 H5

❖ **Applications**

Single and multipass welding of high strength low alloy steel
Such as HY- 80, and HY- 100

❖ **Characteristics on Usage**

SC- 110M is a metal cored wire which provides an exceptionally smooth and stable arc, low spatter and minimal slag coverage.

❖ **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 in may occur with wrong welding parameter such as high welding speed.
3. Use Ar + 20- 25% CO₂ gas.

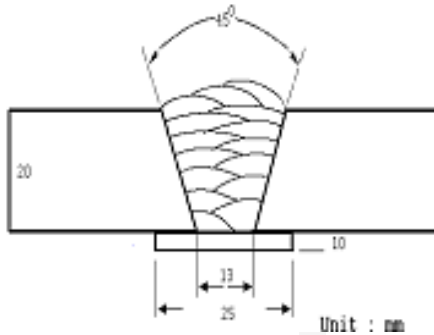


SC-110M Cored

Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Diameter (mm)	: 1.2mm
Shielding Gas	: Ar + 20% CO ₂
Flow Rate (ℓ / min.)	: 20
Amp. / Volt.	: 280 / 29
Stick-Out (mm)	: 20~ 25
Pre-Heat (°C)	: R.T .
Interpass Temp. (°C)	: 150 ± 15
Polarity	: DC(+)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			CVN Impact Test (Joule)
	YS(MPa)	TS(MPa)	EL(%)	-51°C
SC-110M Cored	760	820	20	45
AWS A5.28 E110C-G	N/S	≥ 760	N/S	Not Specified

❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S	Ni	Cr	Mo
SC-110M Cored	0.04	0.70	1.80	0.015	0.015	2.0	0.10	0.60
AWS A5.28 E110C-G	N/S (Not Specified) ^h							

* **h** : The electrode must have a minimum of one or more of the following: ≥0.5%Ni, ≥0.3%Cr, ≥0.2%Mo

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

Consumable (size)	Welding Conditions		Deposition Efficiency(%)	Deposition Rate(kg/hr)
	Amp.(A)	Volt.(V)		
SC-110M cored 1.2mm	200	24	90~92	2.7
	250	28	93~94	4.0
	300	30	94~95	5.7
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(mm)	: 1.2	Amps(A) / Volts(V)	: 270 / 29
Shielding Gas	: Ar +20% 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 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
4.0	3.8	4.1	4.1

Average Hydrogen Content 4.0 ml / 100g Weld Metal



Proper Welding Condition

❖ Proper Current Range

Consumable	Shielding Gas	Welding Position	Wire Dia. (mm)
			1.2mm
SC-110M Cored	Ar+20% CO ₂	F & HF	220~290Amp

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