

Multi-purpose Flux Cored Wire for Mild Steel.

SC-420MC

Description & Applications

SC-420MC is a multi-purpose, all-positional rutile flux cored wire for use with either M21 or C1 gas. It can be used in all positions, and its smooth and stable arc promotes spatter-free welds with low fume and hydrogen generation. It also has good vertical weldability at low current, and forms a flat stringer bead when using M21 (Ar+20%CO₂) gas.

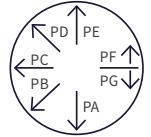
These properties make SC-420MC an all-around product for industries such as shipbuilding, steel construction, bridges, vehicles, chemical plant machinery and other metal fabrication.

Specifications

- AWS A5.20 E71T-1C/-9C H4
A5.20 E71T-1M/-9M H8
- EN ISO T46 3 P C1 1 H5
T46 3 P M21 1 H5

Features

- Excellent all position weldability
- Soft arc and beautiful bead appearance
- Low hydrogen level and good crack resistance
- AWS D1.8 Seismic Supplement
- Use with either Ar+CO₂ or CO₂ gas
M21: Mixed gas (Ar+20% CO₂)
C1: Active gas (100% CO₂)



FCAM

Approvals

Dia. (mm)	Approvals						
	BV	DNV.GL	LR	RINA	TUV	DB	CE
1.2-1.6	SA3Y HHH	IIIMSH5	3YSH5	3YSH5	19714	42.115.06	HWK-318-00

Approvals are based on factory location. Please contact Hyundai Welding for more information.

Weldability

Item	SC-420MC			
	12mm Fillet 3G(PF) Manual Welding		6mm Vertical Fillet 3G(PF) Auto Welding Carriage	
Weld Bead				
	Shielding Gas	C1 (100% CO ₂)	M21 (Ar+20%CO ₂)	C1 (100% CO ₂)
Welding Conditions	200A/26V	200A/25V	180A/26V 25cm/min (9.8in/min)	180A/25V 25cm/min (9.8in/min)
Leg length & Weld throat	N/A	N/A	a: 4.8mm b: 5.1mm c: 4.6mm	a: 5.4mm b: 5.2mm c: 4.2mm

Mechanical Properties of All Weld Metal

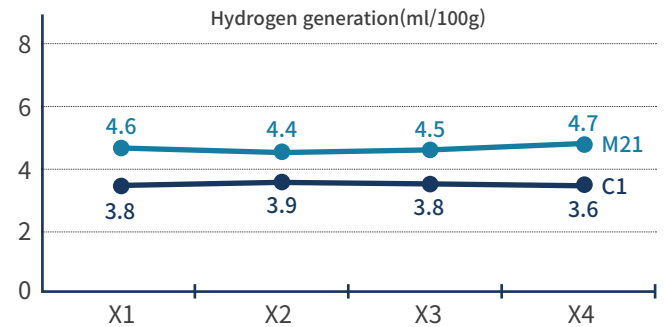
Shielding Gas	YS (MPa)	TS (MPa)	EL (%)	Impact Value (J)	
				Temp (°C)	Avg. (J)
C1 (100% CO ₂)	520	570	28	-20	60
				-30	50
M21 (Ar+20%CO ₂)	575	630	26	-20	82
				-30	60

Shielding Gas	Chemical Composition (wt%)				
	C	Si	Mn	P	S
C1 (100% CO ₂)	0.035	0.45	1.15	0.01	0.006
M21 (Ar+20%CO ₂)	0.04	0.6	1.35	0.01	0.006



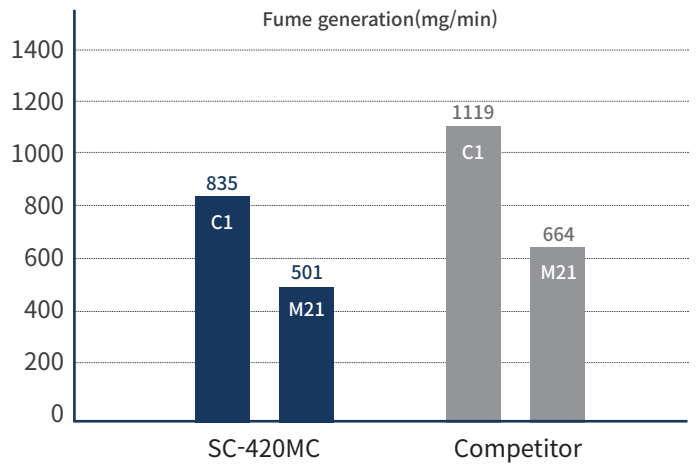
Hydrogen Generation

Diameter	1.2mm (0.045in)
Welding speed	30cm/min (11.8in/min)
Gas flow	C1 (100%CO ₂) / M21 (Ar+20%CO ₂), 20ℓ/min.
Stick-out	20mm
Parameters	240A / 27V (C1, 100%CO ₂) 240A / 27V (M21, Ar+20%CO ₂)

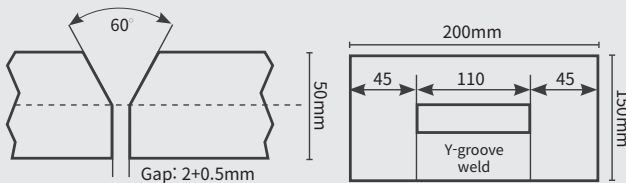


Fume Generation

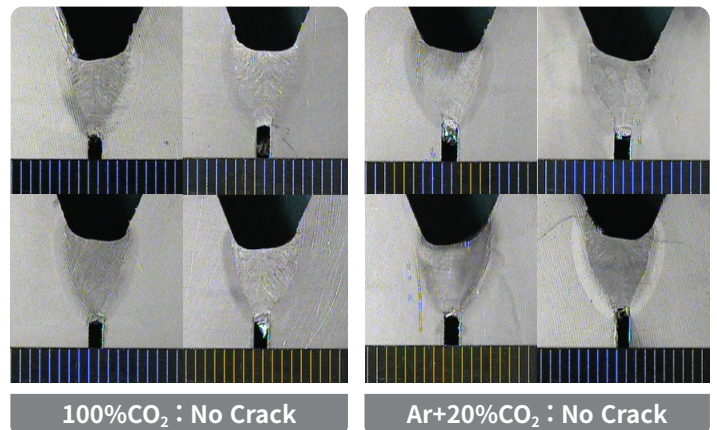
Diameter	1.2mm (0.045in)
Gas flow	C1 (100%CO ₂) / M21 (Ar+20%CO ₂), 20ℓ/min.
Stick-out	20mm
Parameters	280A / 32V (C1, 100%CO ₂), 280A / 30V (M21, Ar+20%CO ₂)
Speed	30cm/min (11.8in/min)
Welding time	30s
Fume collection time	2m 30s



Cold-Crack Resistance



- Y-Groove welding Cracking Test (Modified by EN ISO 17642-2 and JIS Z 3158)
- Base metal Temp : 15~25°C (No Preheat)
- 240A / 27V / 55cm/min(21.7in/min) (Heat Input : 7kJ/cm)
- After welding, the specimen has been cooled under normal conditions for 72 hours.



Packaging

Diameter mm (in)	Spool		
	5kg (11lbs)	12.5kg (28lbs)	15kg (33lbs)
1.2 (0.045)	V	V	V
1.4 (0.052)	V	V	V
1.6 (1/16)	V	V	V

Proper Welding Parameters

Positions	Diameter		
	1.2mm (0.045in)	1.4mm (0.052in)	1.6mm (1/16in)
F & HF	100~280A	120~300A	140~320A
V-up & OH	140~260A	160~280A	180~280A
V-Down	100~280A	120~300A	200~300A