

# SM-80A

☆AWS A5.28 E110C-G-H4

## For 780MPa High Tensile Strength Steel

### APPLICATIONS

Welding of 780MPa high tensile strength steel for frames, bridges, pressure vessels, penstocks and offshore structures.

### CHARACTERISTICS

SM-80A is a metal type seamless flux cored arc welding wire to be used with Ar+20%CO<sub>2</sub> shield gas. Arc is stable, spatters and slags are few and weldability is excellent in a wide current range. Bead appearance is beautiful and weld metal shows excellent toughness at low temperatures. Diffusible hydrogen content is as low as solid wires and crack resistance is excellent.

### GUIDELINES FOR USAGE

1. Arc voltage should be 1 or 2 volt lower than that for conventinal flux cored wires and 4 or 5 volt lower than that for solid wires.
2. All dust and rust in groove should be completely removed.
3. Preheating at 100~150°C is required in accordance with plate thickness, restraint, heat input, etc.
4. A suitable shield gas flow rate is 20-25L/min.
5. Distance between base metal and tip should be kept within 20-30mm.

### WELDING POSITION



### ■ TYPICAL CHEMICAL COMPOSITION OF WELD METAL ( % )

Shield Gas	C	Si	Mn	P	S	Ni	Cr	Mo	Other
Ar+20%CO <sub>2</sub>	0.05	0.37	1.38	0.013	0.005	2.51	0.48	0.42	-

### ■ TYPICAL MECHANICAL PROPERTIES OF WELD METAL

0.2% Yield Strength, MPa	Tensile Strength, MPa	Elongation, %	Charpy 2V-notch at -40°C, J
761	821	22	91

### ■ TYPICAL WELD JOINT TEST

Joint Tensile Test		Charpy 2V-notch		Base metal	Plate Thickness mm
Tensile Strength MPa	Location of Fracture	J			
		−60°C	−40°C		
824	Base Metal	64	88	WELTEN 780E	20

### ■ SIZES & RECOMMENDED CURRENT RANGE<DC( + )>

Diameter (mm)		1.2
Current A	F, H	180~300
	H-Fil	180~300