

# TL-78A1

AWS A5.5 E7018-A1  
EN ISO 3580-B-E4918-1M 3  
JIS Z 3223 E4918-1M3

## Characteristics and Applications:

TL-78A1 is an iron powder low hydrogen type electrode for 490N/mm<sup>2</sup> high tensile steel. It provides high welding efficiency due to the pick-up of iron powder. The weld metal contains 0.5% Mo, and therefore it is suitable for chemical plants, petroleum refinery plants, 0.5%Mo heat-resistant steel and other casting steels.

## Notes on usage:

1. Clean up the contaminations on the base metal and welding seam so as not to derogate the weld metal quality from particles.
2. Dry the electrodes at 350-400 °C for 60 minutes before using.
3. Use back-step method to prevent arc starting from blowholes and hold for 3-5 seconds at every end-up.
4. Maintain short arc length. Moving range should be controlled within 3 times of the wire's dia when you are welding with weave method.
5. Do not exceed the range of recommended current. Over heat input might decrease the impact value.
6. Pre-heat the workpiece at 100~200°C and PWHT at 620~680°C.

## Typical chemical composition of weld metal (wt%):

C	Mn	Si	P	S	Mo
0.06	0.70	0.5	0.02	0.007	0.50

## Typical mechanical properties of weld metal:

Yield strength MPa(ksi)	Tensile strength MPa(ksi)	Elongation %	PWHT
485(70)	570(83)	28	620 x1hr

## Welding position:



## Sizes and recommended current range (AC or DC + ):

Diameter (mm)		3.2	4.0	5.0
Length (mm)		350	450	450
Amps	F	90-130	140-180	190-240
	V&OH	80-120	130-160	-

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