

# TL-96B9

AWS A5.5 E9016-B9  
EN ISO 3580-B-E6216-9C1MV  
JIS Z 3223 E6216-9C1MV

## Characteristics and Applications:

TL-96B9 is a low hydrogen type electrode. The weld metal contains 9%Cr-1%Mo and some little Nb, V to improve the creep problem at prolonged high temperature. With the characters of stable arc, little spatter, complete slag covering, it is suitable for welding the steel such a ASTM A213-T91, A335 P91, A387 Gr.91, A182 F91.

## Notes on usage:

1. Clean up the contaminations on the base metal and welding seam to avoid from cracking & blow hole issue.
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 operating range recommended. Over heat input might decrease the impact value.
6. Pre-heat the workpiece at 250~350°C and proceed PWHT according to relevant specifications.

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

	C	Mn	Si	P	S	Cr	Mo	Nb	V	N	Cu	Al	Ni
AWS	0.08-0.13	≤ 1.20	≤ 0.30	≤ 0.01	≤ 0.01	8.0-10.5	0.85-1.20	0.02-0.10	0.15-0.30	0.02-0.07	≤ 0.25	≤ 0.04	≤ 0.80
EN ISO	0.08-0.13	≤ 1.25	≤ 0.30	≤ 0.01	≤ 0.01	8.0-10.5	0.85-1.20	0.02-0.10	0.15-0.30	0.02-0.07	≤ 0.25	≤ 0.04	≤ 1.0
Typical value	0.085	0.65	0.18	0.01	0.007	10.3	1.0	0.05	0.20	0.03	0.02	0.001	0.022

## Typical mechanical properties of weld metal:

	Yield strength MPa(Ksi)	Tensile strength MPa(Ksi)	Elongation %	PWHT
AWS	≥ 530(77)	≥ 620(90)	≥ 17	760°C x 2hrs
EN ISO	≥ 530(77)	≥ 620(90)	≥ 15	760°C x 1hr
Typical value	580(84)	725(105)	26	760°C x 2hrs

## Welding position:



## Sizes and recommended operating range (AC or DC <+>):

Diameter (mm)	3.2	4.0		5.0
Length (mm)	350	350	450	450
Current (Amps)	90-130	140-180		160-220

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