

TL-80

AWS A5.5 E9016-G
EN ISO 18275-A-E 55 2 Z B 1 2
JIS Z 3211 E6216-G

Characteristics and Applications:

TL-80 is a low hydrogen type electrode for the welding of 620N/mm² grade high tensile steel in all-position welding. It provides excellent mechanical properties and X-ray test. Due to its good crack resistance, it is suitable for shipbuilding, machine fabrication, offshore structure, pressure vessel, high pressure pipe. Proper base metals also include forging, cast iron, structural steel, steel pipe for heat transfer, pressure vessel, alloy steel, ASTM A202/486 Gr90/736 Gr3, etc..

Notes on usage:

1. Be sure to clean up the contaminations on the base metal and welding seam so as not to derogate the weld metal quality from particles.
2. Maintain short arc length. Moving range should be controlled within 3 times of the wire's dia when you are welding with weave method.
3. Use back-step method to prevent arc starting from blowholes and hold for 3-5 seconds at every end-up.
4. Do not exceed the range of recommended current. Over heat input might decrease the impact value.
5. The product might need to pre-heat at 80°C varied by base metal or its thickness.

Typical chemical composition of weld metal (wt%):

	C	Mn	Si	P	S	Ni	Cr	Mo	V	Cu	Nb
AWS	-	≥1.00	-	≤0.03	≤0.03	≥0.50	-	≥0.20	-	-	-
EN ISO	-	-	-	-	-	-	-	-	-	-	-
Typical value	0.080	1.40	0.40	0.02	0.005	0.81	0.021	0.33	0.007	0.009	0.004

Typical mechanical properties of weld metal:

	Yield strength MPa(ksi)	Tensile strength MPa(ksi)	Elongation %	Charpy V-Notch J (ft-lbf) -20°C (0°F)	PWHT
AWS	≥530(77)	≥620(90)	≥17	-	620°C x1hr
EN ISO	≥550(80)	610-780(88-113)	≥18	≥47(35)	580°C x1hr
Typical value	660(96)	740(107)	26	118(87)	620°C x1hr

Welding position:



Sizes and recommended current range (AC or DC <+>)

Diameter (mm)		3.2	4.0
Length (mm)		350	450
Amps	F	90-130	180-240
	V&OH	80-120	150-200

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