

# TL-60

JIS Z 3212 D5316  
AWS A5.5 E8016-G  
EN499 E 46 A Z B 12

## Characteristics and Applications:

TL-60 is a low hydrogen type electrode for the welding of 550N/mm<sup>2</sup> grade high tensile steel in all positions. It is suitable for high carbon steels, low manganese steels, ships and high pressure vessels due to its good crack resistance. Proper base metals are also including forging, structural steel, alloy steel, high pressure pipe, pressure vessel, ASTM A299/302/372, 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. Maintaining short arc length as possible is highly recommended. While welding with weave method, moving range should be controlled within 3 times of the wire's dia.
3. Dry the electrodes at 350~400°C for 60 minutes before use. Take out a batch of half day consumption and keep in the environment at 100~150°C during welding process.
4. When the heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input depending on the required impact value.
5. Use back-step method and hold for 3-5 seconds at every end-up to prevent arc starting from blowholes.

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

C	Mn	Si	P	S
0.08	1.50	0.65	0.02	0.007

## Typical mechanical properties of weld metal

YS (MPa)	TS (MPa)	EL %	CVN J	
480	580	32	0°C	-30°C
			128	108

## 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	130-180	180-240
	V&OH	85-120	110-160	150-180

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