

# TLH-581R

AWS A5.1 E7018-1 H4R  
EN ISO 2560-A-E 46 4 B 1 2 H5  
JIS Z 3211 E4918-1 H5

## Characteristics and Applications:

TLH-581R is an iron powder low hydrogen type electrode for all-positioned welding of 490N/mm<sup>2</sup> grade high tensile steel. The welding provides high deposition rate, good X-ray soundness, good mechanical properties, excellent moisture absorbency resistance and smooth bead appearance. Because of excellent notch toughness at the temperature of -45°C, it is very suitable for low alloy structure, medium carbon steels, barge offshore rigs and shipbuilding.

## Notes on usage:

1. Take the backstep method to prevent blowholes at the arc starting.
2. Keep the arc as short as possible.
3. Be sure to clean up the base metal surface from all contamination.
4. If electrode has been exposed to the atmosphere over 8 hours, it must be rebaked at 400°C for one hour.

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

	C	Mn	Si	P	S	Ni	Cr	Mo	V	Nb	Cu
AWS	≤0.15	≤1.60	≤0.75	≤0.035	≤0.035	≤0.30	≤0.20	≤0.30	≤0.08	-	-
EN ISO	-	-	-	-	-	≤0.3	≤0.2	≤0.2	≤0.005	≤0.05	≤0.3
Typical value	0.065	1.40	0.50	0.015	0.004	0.015	0.018	0.001	0.014	0.004	0.01

## Typical mechanical properties of weld metal:

	Yield strength MPa(ksi)	Tensile strength MPa(ksi)	Elongation %	Charpy V-Notch J (ft-lbf)	
				-40°C (-40°F)	-45°C (-50°F)
AWS	≥400(58)	≥490(70)	≥22	-	≥27(20)
EN ISO	≥460(67)	530-680(77-99)	≥20	≥47(35)	≥27(20)
Typical value	490(71)	586(85)	32	130(96)	120(90)

## Welding position:



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

Diameter (mm)		2.6	3.2	4.0	5.0
Length (mm)		350	350	350 450	450
Amps	F	95-110	120-140	160-200	200-240
	V&OH	80-100	110-130	130-160	-

## Typical absorbed moisture (at 27°C/80%RH condition):

0hr	9hrs	24hrs
0.13%	0.13%	0.17%

## Typical diffusible hydrogen (at 27°C/80%RH condition):

0hr(ml/100g)	4hrs(ml/100g)
3.27	3.43

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