

# **ST-50.6**

GAS TUNGSTEN WELDING CONSUMABLES  
FOR WELDING OF Mild & 490Mpa CLASS  
HIGH TENSILE STEEL

2019.09



## ❖ Specification

**AWS A5.18**

**ER70S-6**

**JIS Z3316**

**YGT50**

**EN ISO 636-A**

**W 42 5 3 SI1**

## ❖ Applications

Butt and fillet welding of carbon steel for pressure vessels, tubes, ships

## ❖ Characteristics on Usage

ST-50.6 is a wire for TIG welding with pure Ar gas.

All position welding and steel sheet welding can be performed quite easily.

Most suitable for one-side welding of tubes.

It is used in DC straight polarity.

## ❖ Note on Usage

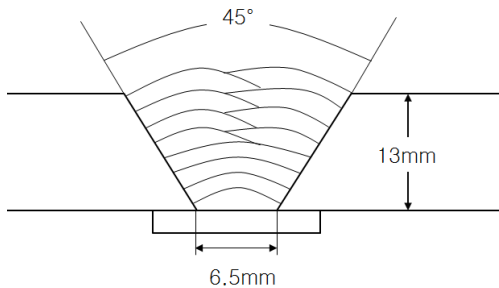
1. Use welding grade Ar100% gas.
2. Flow quantity of shielding gas should be 15~20ℓ/min, generally.
3. Use the wind-screen against wind.



## Mechanical Properties & Chemical Composition of All Weld Metal

### ❖ Welding Conditions

Method by AWS Spec.



<b>Diameter(mm)</b>	: 2.4mm (3/32in)
<b>Shielding Gas</b>	: 100%Ar
<b>Flow Rate(ℓ /min.)</b>	: 15 ~ 20
<b>Amp./ Volt.</b>	: 220 ~ 250A / 15~20V
<b>Pre-Heat(℃)</b>	: 150±15
<b>Interpass Temp.(℃)</b>	: 150±15
<b>Polarity</b>	: DC(-)

[ Joint Preparation & Layer Details ]

### ❖ Mechanical Properties of the weld metal

Brand Name	Tensile Test Results			Charpy V-Notch Impact Value J (ft . lbs)
	Y.S. MPa(ksi)	T.S. MPa(ksi)	EL.(%)	-30℃ (-4°F)
ST-50.6	480 (69.6)	580 (84.1)	30.5	119 (88)
<b>AWS A5.18 ER70S-6</b>	<b>≥ 400</b>	<b>≥ 480</b>	<b>≥ 22</b>	<b>27J@-30℃</b>

### ❖ Chemical Composition of Wire (Wt%)

Brand Name	C	Si	Mn	P	S	Cu
ST-50.6	0.08	0.80	1.45	0.011	0.012	0.12
<b>AWS A5.18 ER70S-6</b>	<b>0.06~0.15</b>	<b>0.80~1.15</b>	<b>1.40~1.85</b>	<b>≤0.025</b>	<b>≤0.035</b>	<b>≤0.50</b>

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