

ST-90B3



❖ Specification

AWS A5.28

ER90S-B3

❖ Applications

ST-90B3 is used to weld 2.25%Cr- 1%Mo steels used for high temperature, high pressure piping and pressure vessels.

❖ Characteristics on Usage

ST-90B3 is used for joining carbon steel and Cr-Mo alloys. Careful control of preheat, interpass temperatures, and postweld heat treatment is essential to prevent cracking.

❖ Note on Usage

Use 100% Ar

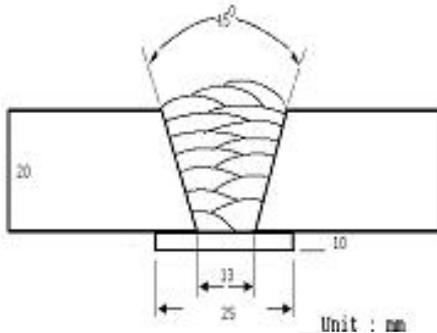
❖ Packing

Dia.	2.0mm (5/64in)	2.4mm (3/32in)	3.2mm (1/8in)
TIG	5kg (11lbs)		



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions



[Joint Preparation & Layer Details]

Diameter(mm)	: 2.4mm
Shielding Gas	: 100%Ar
Flow Rate(ℓ /min.)	: 20~25
Amp./ Volt.	: 160~240 / 13~16
Pre-Heat(℃)	: 200 ± 15
Interpass Temp.(℃)	: 200 ± 15
Polarity	: DC(-)
PWHT(℃)	: 690 ± 15

❖ Mechanical Properties of All weld metal

Consumable	Tensile Test			CVN Impact test Joule (ft·lbs)	
	YS Mpa (ksi)	TS MPa (ksi)	EL(%)	0℃ (32°F)	-20℃ (-4°F)
ST-90B3	596 (86)	759 (110)	23	161 (119)	129 (95)
AWS A5.28 ER90S-B3	540	620	17	Not Required	

❖ Chemical Analysis of the wire(wt%)

Consumable	Chemical Composition (wt%)								
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu
ST-90B3	0.100	0.46	0.56	0.014	0.001	0.15	2.48	1.04	0.12
AWS A5.28 ER90S-B3	0.07 ~0.12	0.40 ~0.70	0.40 ~0.70	≤0.025	≤0.025	≤0.20	2.30 ~2.70	0.90 ~1.20	≤0.35

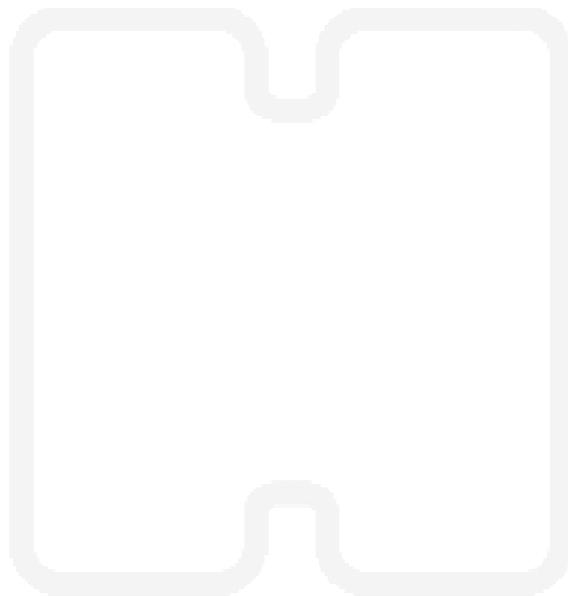
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**Mechanical Properties
& Chemical Composition of All Weld Metal**

❖ **Chemical Analysis of All weld metal(wt%)**

Consumable	Chemical Composition (wt%)								
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu
ST-90B3	0.087	0.45	0.59	0.006	0.001	0.15	2.04	0.86	0.22



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