

## Techalloy 90S-B3

### DESCRIPTION

Techalloy 90S-B3 is used for the welding of 2-1/4% chromium / 1% Mo steels utilized for high temperature service conditions. This is an air hardening material that requires a minimum preheat and interpass temperature of 350°F. Subarc wire can be also be termed 521.

### SPECIFICATIONS & APPROVALS

**Quality Systems :**

ISO Q9001-2000

**Specifications :**

AWS/ASME SFA: A5.23 EB-3; A5.28 ER90S-B3

UNS: N/A

European Standard: N/A

**Approvals**

### TYPICAL CHEMICAL COMPOSITON

C	Mn	Si	Fe	Cr	Ni	Cu	Mo	S / P	Al
0.10	0.65	0.45	Bal.	2.55	0.10	0.10	1.05	.01 / .01	0.005

### TYPICAL MECHANICAL PROPERTIES of WELD METAL

Tensile Strength	Yield Strength	Elongation 4d	Impact @ 68°F / 20°C
94.5 Ksi	80.5 Ksi	19%	80 ft-lb
650 Mpa	550 Mpa		105 Joules

**NOTE:** Mechanical properties shown above were obtained with a postweld heat treatment of 1275°F for one hour.

### WELDING PARAMETERS

Process	Electrical	Voltage	Amperage	Shielding Gas	Gas Flow, CFH	Welding Speed
<u>GMAW</u> <i>Spray Transfer</i>	DCEP	28 - 32	.035" (0.90mm) 165-200	98 Ar - 2O <sub>2</sub>	30 - 50	30-50 IPM
		30 - 34	.045" (1.14mm) 180-220			
			.062" (1.60mm) 230-260			
<i>Short Circuit</i>	DCEP	22 -25	.035" (0.90mm) 100 - 140	75 Ar - 25CO <sub>2</sub>		
		23 - 26	.045" (1.14mm) 120 -150			
<i>Globular</i>				100% CO <sub>2</sub>		
<u>GTAW</u>	DCEN	20	.093" (3.20mm) 125-175	100% Ar	30 - 40	
			.125" (3.20mm) 175-250			
<u>SAW</u>	DCEP	28	3/32" (2.50mm) 400	N/A	N/A	110 IPM
			1/8" (3.14mm) 450			80 IMP
			5/32" (4.00mm) 500			65 IPM