



Unibrazed 90S-B3/EB-3

Specifications

AWS A5.28 /ASME SFA5.28 Class ER90S-B3 (GMAW/GTAW) UNS K30960

AWS A5.23/ASME SFA 5.23 Class EB-3 (SAW) UNS K31115

Description: Unibrazed 90S-B3/EB-3 is used to weld 2¼Cr/1Mo Steels used for high temperature, high pressure piping and pressure vessels. It is also used for joining carbon steel and Cr-Mo alloys. Careful control of preheat, interpass temperatures, and postweld heat treatment is essential to prevent cracking. When using Unibrazed 90S-B3/EB-3 in the as-welded condition special care is required due to the higher strength levels.

Typical Chemistry

Product	C	Mn	Si	S	P	Ni	Cr	Mo	Cu	Sb	Sn	As
90S-B3	.08	.59	.49	.007	.009	.06	2.4	.93	.13	.003	.006	.001
EB-3 (wire)	.07	.65	.25	.005	.008	.07	2.4	.91	.15	.005	.007	.0028

Typical Mechanical Properties (PWHT 1265°F for 1 hr.)

Tensile Strength	92,800 psi
Yield Strength	78,300 psi
Elongation	22%
Charpy Impacts	Not required
X Factor (Fx)	<15

Note: $F_x = (10P + 5Sb + 4Sn + As) / 100$ (elements in ppm)

Recommended Welding Parameters

Process	Dia.	Amps	Volts	Gas/Flux
GTAW	1/16"	50-120	7 – 13	Argon
	3/32"	120-200	10- 16	Argon
	1/8"	150-220	12 - 18	Argon
GMAW Short Arc	.035"	90-160	14 – 20	CO ₂
	.045"	120-200	16 - 20	CO ₂ or 75Ar/ 25CO ₂
GMAW Spray Transfer	.035"	180-230	25-28	98Ar/2CO ₂
	.045"	250-350	25-30	75Ar/25CO ₂
	.1/16"	280-400	26-36	75Ar/ 2 CO ₂
SAW	3/32"	250-400	28-32	Please Call
	1/8	400-600	30-34	

Notice: The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus, the results are not guarantees for use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.