



Unibraze 80S-B6 (ER80S-B6)

Classification:

AWS A5.28 / ASME SFA5.28 Class ER80SB6

Description:

Unibraze 80S-B6 is used for joining 5%Cr and 1/2% molybdenum steels such as A336 Gr. F5, A155 Gr. 5 Cr, A335 Grs. P5 and P5b, A217 C5 (cast) and A199/A213 Grs. T5 and T5b. These grades are used for elevated temperature creep service and with corrosion resistance against steam, hot hydrogen gas and high sulfur crude oils. Used primarily in the petro-chemical and refinery industries. A preheat and inter-pass temperature of not less than 350°F should be maintained during welding. Unibraze 80S-B6 is similar to material previously classified as ER502 in AWS A5.9-81.

Typical Chemical Composition:

C	Mn	Si	P	S	Ni	Cr	Mo	Cu	N
0.09	0.51	0.39	0.007	0.006	0.05	5.1	0.56	0.13	0.009

Typical Mechanical Properties:*

Tensile Strength	Yield Strength	Elongation in 2"
85,600 psi	73,000 psi	20%

*Mechanical properties listed reflect a PWHT of 1375°F (745°C) for 2 hours.

Recommended Preheat, Interpass and Postweld Heat Treatment Temperatures:

Preheat & Interpass	350 - 450°F	(177 - 232°C)
Post Weld Heat Treat	1375 +/-25°F	(745 +/- 15°C)

Recommended Welding Parameters:**

GMAW (DC Reverse Polarity) Electrode Positive Spray transfer:

Wire Dia.	Amps	Volts	Gas
.035	180-230	25-28	98Ar/2O ₂
.045	250-350	25-30	75Ar/25CO ₂
1/16	280-400	26-36	75Ar/25CO ₂

GTAW (DCSP) 2 % Thoriated Tungsten Electrode negative

Wire Dia.	Amps	Volts	Gas
1/16"	50-120	7-13	Argon
3/32"	120-200	10-16	Argon
1/8"	150-220	12-18	Argon

** All parameters are suggested as basic guidelines and will vary depending on joint design number of passes, and other factors.

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.