

Classifications

AWS A5.28 / SFA-5.28	EN ISO 21952-B
ER80S-B2	1CM

Characteristics and typical fields of application

Union ER 80S-B2 is a copper coated solid filler rod for manual gas tungsten arc welding. The 1.25% Cr-0.5% Mo type weld metal exhibits a bainitic microstructure with favorable mechanical properties in tempered and quenched and tempered condition. Under certain conditions, applications in the as welded condition is possible. The range of application covers joint welding of similar creep resistant steel and steel casting. The chemical composition of Union ER 80S-B2 aligns with AWS SFA 5.28 specification and fulfills a Bruscato X-factor of ≤ 15 ppm.

Base materials

Similar alloyed creep resistant steels and castings like

1.7335 13CrMo4-5, 1.7262 15CrMo5, 1.7728 16CrMoV4, 1.7218 25CrMo4, 1.7225 42CrMo4, 1.7258 24CrMo5, 1.7354 G22CrMo5-4, 1.7357 G17CrMo5-5

ASTM A 182 Gr. F12; A 193 Gr. B7; A 213 Gr. T12; A 217 Gr. WC6; A 234 Gr. WP11; A335 Gr. P11, P12; A 336 Gr. F11, F12; A 426 Gr. CP12

Typical analysis

	C	Si	Mn	Cr	Mo
wt.-%	0.10	0.55	0.60	1.30	0.50

Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A ($L_0=5d_0$)	Impact energy ISO-V KV ft-lbs	
	ksi	ksi	%	68°F	- 20°F
T1	81 (≥ 68)	97 (≥ 80)	26 (≥ 19)	184 (≥ 40)	89 (≥ 40)

T1: tempered (1150°F / 1 h)

Operating data

	Polarity	DC -	Dimension
	Shielding gas	I1-3	1/16" x 39"
	AWS A5.32 (ISO 14175)		3/32" x 36"
	Rod marking	ER80S-B2	1/8" x 36"

Preheating, interpass temperature, and post-weld heat treatment as required by the base metal. Preheating can normally be recommended being in a range of 200 to 500°F depending on the wall thickness. Common post weld heat treatments are carried out at 1275°F +/- 25°F.

Approvals

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