

MIDALLOY ER70S-B2L (formerly ER80S-B2L) WELDING WIRE

CLASSIFICATION

- AWS 5.28:2005 Class ER70S-B2L / ASME SFA 5.28 Class ER70S-B2L
- AWS 5.28:1979 Class ER80S-B2L
- UNS #K20500

DESCRIPTION

- MIDALLOY ER70S-B2L welding wire is a copper-coated wire, used for GMAW and GTAW welding.

APPLICATION

- MIDALLOY ER70S-B2L a low carbon content variation (0.05%C max.) of ER80S-B2. Midalloy ER70S-B2L welding wire is designed for the welding of 1¼ Cr / ½ Mo steel that require a lower as-welded hardness.
- Normal applications include framework on transportation equipment (i.e. auto frames, mountain bikes etc).
- Structural supports and ductwork which are used for higher temperature service than mild steels.
- Controlling preheating from 275°F to 325°F and interpass temperatures of 750°F during welding followed by slow cooling to room temperature is beneficial to keep ductility.
- The as-welded filler metal deposit exhibits a lower strength and hardness and may not require PWHT.
- Midalloy ER70S-B2L elevated temperature creep rupture values are not as high as ER80S-B2.

TYPICAL CHEMISTRY

C	Mn	Si	Cr	Mo	P	S	Cu
.04	.55	.48	1.35	.55	.012	.006	.15

TYPICAL MECHANICAL PROPERTIES

AS WELDED*

PWHT 1150°F**

TENSILE STRENGTH	85,000 PSI	75,000 PSI MIN
YIELD STRENGTH	71,500 PSI	58,000 PSI MIN
ELONGATION	18%	19%
HARDNESS	23 Rc	85Rb to 20 Rc

*As welded with a preheat of 300°F and interpass of 750°F

**Post weld heat treatment between 1150°F for one hour.

RECOMMENDED WELDING PARAMETERS

PROCESS	DIA. OF WIRE	AMPERAGE	VOLTAGE	GAS/FLUX
GTAW (TIG)	1/16"	50-120	7-13	Ar
	3/32"	120-200	10-16	Ar
	1/8"	150-220	12-18	Ar
GMAW (MIG) SHORT ARC	.035"	90-160	14-20	CO ₂
	.045"	120-200	16-20	CO ₂ or 75 Ar / 25 CO ₂
	1/16"	-	-	CO ₂ or 75 Ar / 25 CO ₂
GMAW (MIG) SPRAY TRANSFER	.035"	180-230	25-28	98 Ar / 2 O ₂
	.045"	250-350	25-30	75 Ar / 25 CO ₂
	1/16"	280-400	26-36	75 Ar / 25 CO ₂

STANDARD PACKAGE

- TIG 50 lb. carton
- MIG 33 lb. spool

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