AN ISO 9001:2015 COMPANY
CERTIFICATE NO.: C755336

ER80S-B8 DATA SHEET

Pinnacle Alloys ER80S-B8
AWS CLASS ER80S-B8
CODE AND SPECIFICATION DATA:
AWS A5.28 ASME SFA 5.28; UNS S50480

DESCRIPTION:
Pinnacle Alloys ER80S-B8 has a nominal composition (wt-%) of **9 Cr, 1 Mo**. Filler metals of this classification are used to weld materials of similar composition, usually in the form of pipe or tubing, such as ASTM A 217 Gr C12, A 213 Gr T9, and A 182 Gr F9. The alloy is air-hardening material and, therefore, when welding with this filler metal, preheat and post weld heat treatment are required. These creep resistant steels are typically used in chemical industries for heat exchangers, boilers, piping and pressure vessels at service temperatures up to 1100°F. Preheat and interpass temperatures are typically kept between 400-500°F. This filler metal is used in the PWHT condition, typically around 1375°F for one hour.

DIAMETERS: .035", .045", 1/16", 3/32", 1/8", 5/32"

WELDING POSITIONS: All positions
GMAW spray transfer limited to flat and horizontal fillet positions only

TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.10	0.075
Chromium (Cr)	8.00-10.50	8.575
Copper (Cu)	0.35	0.117
Manganese (Mn)	0.40-0.70	0.536
Molybdenum (Mo)	0.80-1.20	0.886
Nickel (Ni)	0.50	0.210
Phosphorus (P)	0.025	0.015
Silicon (Si)	0.50	0.336
Sulfur (S)	0.025	0.007

NOTE: Single values are maximums.

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TYPICAL MECHANICAL PROPERTIES:

	AWS Spec (min)	SR 1 HR @ 1375°F (GMAW)	SR 1 HR @ 1375°F (GTAW)
Ultimate Tensile Strength	80,000 psi (550 MPa)	91,300 psi (630 MPa)	97,000 psi (670 MPa)
Yield Strength	68,000 psi (470 MPa)	72,500 psi (500 MPa)	76,800 psi (530 MPa)
Percent Elongation in 2”	17%	23%	24%
CVN @ 68°F (20°C)	Not required	44 ft•lb$_f$ (60 Joules)	184 ft•lb$_f$ (250 Joules)

TYPICAL WELDING PARAMETERS:

	Diameter	Amperage	Volts	Shielding Gas
GTAW	3/32”	70-210	9-16	100% Ar
	1/8”	90-280	10-19	
	5/32”	120-320	10-19	
GMAW Spray Transfer	.035”	200-260	26-32	98% Ar/ 2% O_2
	.045”	240-360	26-34	
	1/16”	270-450	27-38	

NOTE: Maintaining a proper welding procedure, including pre-heat and interpass temperatures, may be critical depending on the type and thickness of steel being welded.

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 the use in the field. The manufacturer disclaims any warranty of merchantability of fitness for any particular purpose with respect to its products.

CAUTION: Consumers should be thoroughly familiar with the safety precautions on the warning label posted in each shipment and in the American National Standards A49.1, “Safety in Welding and Cutting,” published by the American Welding Society, 8669 NW 36 Street, #130, Miami, FL 33126: OSHA Safety and Health Standards 29 CRF 1910 is available from the U.S. Department of Labor, Washington, D.C. 20210.

Pinnacle Alloys SDS sheets may be obtained on the website below.

www.pinnaclealloys.com
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