



ER80S-D2 DATA SHEET

Pinnacle Alloys ER80S-D2

AWS CLASS ER80S-D2, ER90S-D2

CODE AND SPECIFICATION DATA:

AWS A5.28 ASME SFA 5.28

DESCRIPTION:

Pinnacle Alloys ER80S-D2 is a low alloy copper-coated tig rod with 0.5% Mo content designed for welding low-alloy steels with high tensile strength and creep resistance. It exhibits good impact strength at low temperatures. Pinnacle Alloys ER80S-D2 is suitable for pipelines and pressure vessels with operating temperatures of about 930°F (500°C). It will also find applications for the repair of medium strength steel castings.

BASE MATERIALS TO BE WELDED:

- AISI 4130
- A487 Gr 2A
- A487 Gr 2B
- A487 Gr 2C

DIAMETERS: .035", .045", 1/16", 3/32", 1/8", 5/32"**WELDING POSITIONS:** All positions**WELDING GUIDELINES:** Preheat and interpass temperature 300°F (150°C). PWHT is not required.**TYPICAL DEPOSIT COMPOSITION (Wt %):**

Carbon (C)	0.08
Copper (Cu)	0.15
Manganese (Mn)	1.90
Molybdenum (Mo)	0.50
Phosphorous (P)	0.01
Silicon (Si)	0.70
Sulfur (S)	0.01

TYPICAL MECHANICAL PROPERTIES (as welded):

Ultimate Tensile Strength (psi)	95,730 psi (660 MPa)
Yield Strength (psi)	82,670 psi (570 MPa)
Percent Elongation	22%
CVN (ft•lbf) @ 68°F (20°C)	150 ft•lbf (200 Joules)


TYPICAL WELDING PARAMETERS:

	Diameter	Amperage	Volts	Shielding Gas
GTAW	.035"	50-70	10-12	100% Ar
	.045"	70-100	10-12	
	1/16"	100-125	12-15	
	3/32"	125-175	15-20	
	1/8"	175-250	15-20	
	5/32"	175-250	15-20	
GMAW – Spray Transfer	.035"	165-200	28-32	80-85% Ar/ Bal CO ₂ 95-98% Ar/ Bal O ₂
	.045"	180-220	30-34	
	1/16"	230-260	30-34	
GMAW – Short Circuiting Transfer	.035"	100-140	22-25	100% CO ₂ * 75% Ar/ 25% CO ₂ **
	.045"	120-150	23-26	

*With 100% CO₂ gas shielding, weld metal undergoes short circuit or globular transfer.

**Only facilitates short circuit or globular transfer.

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, 550 NW LeJune Road, Miami, FL 33126: OSHA Safety and Health Standards 29 CFR 1910 is available from the U.S. Department of Labor, Washington, D.C. 20210.

Pinnacle Alloys MSDS sheet may be obtained at www.pinnaclealloys.com.