



ER 80S-B8 Welding Wire and Rod

U.S. ALLOY CO.
dba Washington Alloy
825 Groves Street
Lowell, NC 28098
www.weldingwire.com

Quality Management System
in accordance with
ISO 9001
Cert # 05-R0925



ALLOY DESCRIPTION AND APPLICATION;

80S-B8 is a low alloy Cr-Mo air hardening filler commonly

Used for high temperature and creep resistance needs often in the oil and chemical industries where base metal such as 9% Cr, 1% Mo steels are found. Typical base metals found in this group are ASTM/ASME grades: A/SA- 182-F9, A/SA- 199-T-9, A/SA- 213-T9, A217 C12, A/SA- 234 WP9, A/SA- 335-P9, A/SA- 336-P9, A/SA- 369-FP9, A/SA- 691 9CR, A/SA 989 9% chromium, A1012 T9 and A/SA- 387-Gr9. Controlled preheat, interpass and postheat treatment are needed.

80S-B8 is similar to the previously classified ER505 in AWS A5.9-93

TYPICAL GMAW WELDING PROCEDURES; DCEP Short Circuit ⁽¹⁾ 98Ar/2% O₂

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Travel speed (ipm)	75/25 CO ₂ (cfh)
0.023	80-350	30-85	14-19	10-15	20-25
0.030	110-340	40-130	15-20	12-24	20-25
0.035	100-520	60-235	16-25	11-40	20-30
0.045	70-270	90-290	18-23	12-22	25-35
<i>Spray 0.035</i>	<i>320-600</i>	<i>160-300</i>	<i>23-26</i>	<i>11-22</i>	<i>(1)25-35</i>
<i>0.045</i>	<i>170-550</i>	<i>170-375</i>	<i>23-29</i>	<i>12-21</i>	<i>(1)25-35</i>
<i>1/16"</i>	<i>175-350</i>	<i>275-475</i>	<i>25-31</i>	<i>9-19</i>	<i>(1)25-35</i>

TYPICAL GTAW WELDING PROCEDURES; DCEN with EWTh-2 truncated conical tip

Filler Wire Size	Tungsten	Amps	Volts	Gas Cup Size	Argon (cfh)	Base thickness
1/16"	1/16"	100-160	12	3/8"	20	1/16-3/32"
1/16-3/32"	3/32"	120-250	12	3/8"	20	1/8- 3/16"
1/8"	1/8"	150-300	12	1/2"	25	1/4-1/2"

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.

WIRE CHEMISTRY (%) AND WELD METAL PROPERTIES;

Carbon	AWS Spec. 0.10 max	Tensile Strength (psi)	AWS Spec. 80,000 min.
Manganese	0.40-0.70	Yield Strength (psi)	68,000 min.
Silicon	0.50 max	Elongation in 2"	17% min.
Phosphorus	0.025 max		
Sulfur	0.025 max		
Molybdenum	0.80-1.20	Nickel	0.50 max
Chromium	8.00-10.50	Copper	0.35 max

AVAILABLE SIZES: TC 80S-B8 = Spools and rods of .035, .045 TS 505
TT 80S-B8 = Cut lengths of .035, .045, 1/16, 3/32, 1/8, 5/32
Other sizes available – please inquire

SPECIFICATIONS; ANSI/AWS A5.28 ER 80S-B8
ASME SFA 5.28 ER 80S-B8 ; A-4, F-6

EAST COAST	GULF COAST	WEST COAST	NORTHEAST COAST
825 Groves St	11723 Cutten Road	8885 White Oak, Ste104	101 Wales Ave
Lowell, NC 28098	Houston, TX 77066	Rancho Cucamonga, CA 91730	Avon, MA 02322
Tel (980) 550-2002	Tel (888) 522-8296	Tel (888) 522-8296	Tel (888) 522-8296
Fax (909) 291-4586	Fax (909) 291-4586	Fax (909) 291-4586	Fax (909) 291-4586



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Warehouse Distribution Center – Dallas/Fort Worth & Portland, Oregon Head Office – Puyallup, Washington

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