



**WA. ALLOY CO.**

WASHINGTON ALLOY'S Quality  
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Cert # 05-R0925

# 80S-Ni2 Carbon Steel Welding Wire and Rod

U.S. ALLOY CO.  
dba Washington Alloy  
7010-G Reames Rd.  
Charlotte, NC 28216  
[www.weldingwire.com](http://www.weldingwire.com)



**American Welding Society**  
Sustaining Company Member



## ALLOY DESCRIPTION AND APPLICATION;

80S-Ni-2 is for welding fine grained and low alloy nickel steels producing high impact values even at low temperature such as -80° F. 80S-Ni2 wire normally used in applications which will produce a chemical composition of 2-2.5 % nickel yielding strengths ranging from 80-100 ksi. Steels commonly welded with this grade would include weathering steels (where color match is not required), shipbuilding, off shore platform rigging and many other similar needs.

## TYPICAL GMAW WELDING PROCEDURES; DCEP Short Circuit <sup>(1)</sup> 98Ar/2%O<sub>2</sub>

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Travel speed (ipm)	CO <sub>2</sub> (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>	<sup>(1)</sup> <i>25-35</i>
<i>0.045</i>	<i>170-550</i>	<i>170-375</i>	<i>23-29</i>	<i>12-21</i>	<sup>(1)</sup> <i>25-35</i>
<i>1/16"</i>	<i>175-350</i>	<i>275-475</i>	<i>25-31</i>	<i>9-19</i>	<sup>(1)</sup> <i>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.

## TYPICAL WIRE CHEMISTRY (%) AND WELD METAL REQUIRMENTS;

	AWS Spec.		AWS Spec.
Carbon	0.12 max.	Nickel	2.00-2.75
Manganese	1.25 max.		
Silicon	0.40-0.80	Charpy V-notch at -80°F	20 ft-lbs min.
Phosphorus	0.025 max.	Tensile Strength (psi)	80,000 min
Sulfur	0.025 max.	Yield Strength (psi)	68,000 min.
Copper contents and coating	0.35 max.	Elongation in 2"	24% min.

**AVAILABLE SIZES:** TC 80S-Ni2 = Spools of .035, .045

TT 80S-Ni2 = Cut lengths of .045, 1/16, 3/32, 1/8, 5/32

## SPECIFICATIONS; ANSI/AWS A5.28 ER 80S-Ni2

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