



WASHINGTON ALLOY'S Quality  
Management System is  
Certified to ISO 9001:2008  
Cert # 05-R0925

# 70S-A1 Low Alloy 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;

70S-A1 is commonly a copper coated carbon steel that contains a well balance chemistry level and 0.5% molybdenum added to increase the strength at elevated temperatures while yielding an improved corrosion resistance. 70S-A1 has a cold cracking resistant weld deposit but will likely have reduced notch toughness. Common base metal includes ASTM 204, A213-T1, A217WC1, A182-F1 and A335-P1. Preheat and Interpass 275-325° F with Post weld heat treatment 1125-1175°F may be required.

### TYPICAL GMAW WELDING PROCEDURES; DCEP <sup>(1)</sup> 98Ar/2O2 or 75/25

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Travel speed (ipm)	CO <sub>2</sub> (cfh)
<i>Spray</i> 0.035	320-600	160-300	23-26	11-22	<sup>(1)</sup> 25-35
0.045	170-550	170-375	23-29	12-21	<sup>(1)</sup> 25-35
1/16"	175-350	275-475	25-31	9-19	<sup>(1)</sup> 25-35

### 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 PROPERTIES;

	AWS Spec.	70S-A1		AWS Spec	Typical
Carbon	0.12 max	0.08	Tensile Strength (psi)	75,000 min.	78-81,000
Manganese	1.30 max	1.00	Yield Strength (psi)	58,000 min.	58-60,000
Silicon	0.30-0.70	0.60	Elongation in 2"	19% min.	21%
Phosphorus	0.025 max.	0.019	Charpy V-notch at 0°F	N/A.	
Sulfur	0.025 max.	0.012			
Molybdenum	0.40-0.65	0.50	Reduction of area	n/a	
Copper contents and coating	0.5 max.		Average Brinell Hardness	n/a	

**AVAILABLE SIZES:** TT 70S-A1 = Cut lengths of 3/32, 1/8  
Other sizes available – please inquire

**SPECIFICATIONS; ANSI/AWS A5.28** ER 70S-A1  
**ASME SFA 5.28** ER 70S-A1

EAST COAST	GULF COAST	WEST COAST
7010-G Reames Rd	4755 Alpine Drive #100A	8535 Utica Ave
Charlotte, NC 28216	Stafford, TX 77477	Rancho Cucamonga, CA 91730
Tel (888) 522-8296	Tel (877) 711-9274	Tel(800)830-9033
Fax (704)598-6673	Fax (281)313-6332	Fax (909)291-4586



Warehouse Distribution Center – Dayton, Ohio

Head Office – Puyallup, Washington

Washington Alloy Company believes that all information and data given is correct. Use this information to assist in making your own evaluations or decisions and this information should not be mistaken as an expressed or implied warranty. U.S. ALLOY CO. assumes no liability for results or damages incurred from the use of any information contained herein, in whole or in part .