



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

# 70S-6 Carbon Steel Welding Wire and Rod



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### ALLOY DESCRIPTION AND APPLICATION;

70S-6 is commonly a copper coated carbon steel that contains high levels of manganese and silicon for stronger deoxidizing power and has excellent welding results on mild steels where poor fit-up, rust and oils may be present.

### TYPICAL GMAW WELDING PROCEDURES; DCEP Short Circuit <sup>(1)</sup> 98Ar/2O<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</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; 100%CO<sub>2</sub>

	AWS Spec.	70S-6		AWS Spec	Typical
Carbon	0.06-0.15	0.10	Tensile Strength (psi)	70,000 min.	90,000
Manganese	1.40-1.85	1.70	Yield Strength (psi)	58,000 min.	73,000
Silicon	0.80-1.15	1.00	Elongation in 2"	22% min.	25%
Phosphorus	0.025 max.	0.010	Charpy V-notch at -20°F	20 ft-lbs min.	28 ft-lbs
Sulfur	0.035 max.	0.015	Reduction of area	n/a	60%
Copper contents and coating	0.5 max.		Average Brinell Hardness	n/a	160

**AVAILABLE SIZES:** TC 70S-6 = Spools of .023, .030, .035, .040, .045, .052, 1/16

TT 70S-6 = Cut lengths of .030, .035, .045, 1/16, 3/32, 1/8, 5/32

**SPECIFICATIONS; ANSI/AWS A5.18 ER 70S-6**

**ASME SFA 5.18 ER 70S-6**

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