



!!!! WARNING !!!!



WELDING FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH.

BEFORE USING THIS PRODUCT THE WELDER (END-USER) MUST READ AND UNDERSTAND THE COMPLETE PRODUCT WARNING LABEL AND MATERIAL SAFETY DATA SHEET (MSDS).

THE MATERIAL SAFETY DATA SHEET (MSDS) WHICH OUTLINES THE POTENTIAL HEALTH HAZARDS AND SAFETY INFORMATION RELATED TO THIS PRODUCT CAN BE DOWNLOADED FROM THE MSDS PORTION OF THIS WEBSITE. IT IS ALSO AVAILABLE FROM YOUR EMPLOYER AND WELDING SUPPLY DISTRIBUTOR.

DO NOT PROCEED WITH USE OF THIS PRODUCT UNTIL YOU READ AND UNDERSTAND THE MATERIAL SAFETY DATA SHEET (MSDS) AND PRODUCT WARNING STATEMENT.

BE SURE TO CONSULT THE LATEST VERSION OF THE MSDS.

SEE THE PRODUCT WARNING LABEL AND MSDS FOR COMPLETE WARNING INFORMATION.



CROWN ALLOYS

COMPANY

30105 STEPHENSON HWY.
MADISON HEIGHTS, MI. 48071
(248) 588-3790 • (800) 521-7878

CROWN ER 70S-6

Superior Carbon Steel Welding Wire

Typical Applications:

Crown ER70S-6 is a premium mild steel solid wire formulated to provide high quality welds on heavy duty, high speed, spray transfer applications as well as light duty, low speed, short-arc applications. Because of the higher levels of silicon and manganese **Crown ER70S-6** is designed to tolerate light to medium levels of surface contamination. Therefore, the **Crown ER70S-6** will produce a smooth stable arc with low spatter, resulting in a weld bead that ties in evenly with the sides and has a beautiful finished appearance. The **Crown ER70S-6** is widely used in frame fabrication, automotive structures, farm implements, construction equipment, pipe fabrication, railcar construction and repair, sheet metal work and general fabrication.

Specifications:

AWS A5.18/A5.18M:2005

Crown ER70S-6	AWS Specification (minimum)	Mechanical Properties using 100% CO₂	Mechanical Properties using 75%Ar / 25%CO₂
Tensile Strength	70,000 psi (min)	85,000 psi (typical)	87,500 psi (typical)
Yield Strength	58,000 psi (min)	70,000 psi (typical)	72,500 psi (typical)
Elongation % in 2"	22.0% (min)	29.0% (typical)	29.5% (typical)
Charpy V-Notch @ -20°F	20 ft.lbs. (min)	52 ft.lbs. (typical)	82 ft.lbs. (typical)

Procedure: MIG(GMAW)

Use DC reverse polarity (electrode positive). This setting will facilitate the welding of sections as thin as 24 gauge with no burnthrough. Suggested welding parameters are as follows:

Short Circuit Transfer Welding Parameters

Diameter	Shielding Gas	Welding Current (amps)	Arc Voltage (volts)	Travel Speed (ipm)	Wire Feed Speed (ipm)	Gas Flow (cfh)
.023	100%CO ₂ or 75%Ar / 25%CO ₂	30 - 55	13 - 15	10 - 20	30 - 200	20 - 35
.030	100%CO ₂ or 75%Ar / 25%CO ₂	30 - 75	15 - 19	10 - 22	75 - 225	20 - 35
.035	100%CO ₂	55 - 175	22 - 26	15 - 35	95 - 290	20 - 35
.035	75%Ar / 25%CO ₂	70 - 235	17 - 29	15 - 35	120 - 675	20 - 35
.045	100%CO ₂	140 - 225	18 - 31	14 - 25	130 - 400	20 - 35
.045	75%Ar / 25%CO ₂	160 - 310	18 - 31	14 - 25	160 - 430	20 - 35

Above parameters are for flat and horizontal fillet positions. Reduce current 10% to 15% for vertical and overhead welding.

Spray Transfer Welding Parameters

Diameter	Shielding Gas	Welding Current (amps)	Arc Voltage (volts)	Travel Speed (ipm)	Wire Feed Speed (ipm)	Gas Flow (cfh)
.030	95%Ar / 5%CO ₂	75 - 225	19 - 26	10 - 22	150 - 500	35 - 50
.035	95%Ar / 5%CO ₂	160 - 275	24 - 30	10 - 22	320 - 510	35 - 50
.045	95%Ar / 5%CO ₂	170 - 375	23 - 32	11 - 21	170 - 550	35 - 50

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LOW ALLOY STEEL

TIG(GTAW) Welding Parameters

for

Crown 2, Crown 3 & Crown 7

(ER 70S-2) (ER 70S-3) (ER 70S-6)

Manual Welding - Direct Current - Straight Polarity - Argon Gas

Metal Thickness	Joint Type	Tungsten Diameter	Filler Rod Diameter	Arc Voltage (volts)	Welding Current (amperage)	Gas Flow (cfh)
.045	All	.040	.045	8 – 14	60 – 100	15
1/16"	Butt / Corner	1/16"	1/16"	10 – 17	70 – 120	15
1/16"	Lap / Fillet	1/16"	1/16"	10 – 17	90 – 130	15
1/8"	Butt / Corner	1/16" - 3/32"	3/32"	12 – 18	110 – 175	15
1/8"	Lap / Fillet	1/16" - 3/32"	3/32"	12 – 18	120 – 185	15
3/16"	Butt / Corner	3/32"	1/8"	13 – 20	140 – 210	20
3/16"	Lap	3/32"	1/8"	15 – 20	150 – 220	20
3/16"	Fillet	3/32"	1/8"	15 – 20	150 – 225	20
1/4"	Butt / Corner	1/8"	5/32"	15 – 22	170 – 270	20
1/4"	Lap	1/8"	5/32"	16 – 22	180 – 280	20
1/4"	Fillet	1/8"	5/32"	16 - 22	180 – 285	20

Use a 2% thoriated tungsten (Th-2) Red Band

All suggested settings are approximate. Inverter-based welders generally require less heat input (lower amps). Welds should be tested to comply to your specifications.