



T H E H A R R I S P R O D U C T S G R O U P
A L I N C O L N E L E C T R I C C O M P A N Y
4501 Quality Place • Mason, OH 45040 U.S.A Tel: 513-754-2000 Fax: 513-754-6015

TECHNICAL SPECIFICATION SHEET

ER70S-6 CARBON STEEL WELDING WIRE

ISO 9001
Cert. No. 31598

NOMINAL COMPOSITION:

Carbon	0.06-0.15%	Chromium	0.15% max.
Manganese	1.40-1.85 %	Copper	0.50% max.
Sulfur	0.035 % max.	Silicon	0.80-1.15 %
Nickel	0.15 % max.	Phosphorus	0.025% max.
Vanadium	0.03% max.	Molybdenum	0.15% max.
Iron	Balance	Others Total	0.50% max.

PHYSICAL PROPERTIES:

Density lbs/cu in .283

TYPICAL MECHANICAL PROPERTIES AS WELDED

Shielding Gas	CO ₂	75% Ar 25% CO ₂	98% Ar 2% O ₂
Tensile Strength (psi)	80-85,000	85-90,000	85-90,000
Yield Strength (psi)	65-70,000	70-75,000	70-75,000
Elongation in 2"	28.5%	28%	28%
Reduction of Area	55-70%	55-70%	55-70%
Charpy V-notch ft. lbs. @ -20F	20-30	25-35	30-40

APPLICATION:

Used primarily for Multiple pass on steels where rusty and dirty surfaces are not cleaned before welding.

* RECOMMENDED WELDING PARAMETERS:

GMAW (MIG) Parameters (DC Reverse Polarity) Electrode Positive Spray transfer

Wire Diameter	Amps	Volts	Argon/1/5% O ₂	Wire Feed ipm
.023	85-170	23-27	25	360-620
.030	135-230	24-28	25	390-670
.035	165-300	24-28	30	360-520
.045	200-375	24-30	30-35	210-360
1/16	275-500	24-32	40	150-360
3/32	300-600	24-33	50	75-125

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GTAW (Tig) Parameters (DCSP) 2 %Thoriated Tungsten Electrode negative ⁽¹⁾

<u>Material</u>	<u>Tungsten dia. (1)</u>	<u>Filler Wire Size</u>	<u>Amps</u>	<u>Gas Cup</u>	<u>Argon (cfh)</u>
1/16"	1/16"	1/16"	100-140	3/8	20
3/32"	1/16"	1/16"	100-160	3/8	20
1/8"	3/32"	1/16"	125-200	7/16	20
3/16	3/32"	3/32"	150-250	7/16	25
1/4"	1/8"	1/8"	150-250	1/2	25
3/8"	1/8"	1/8"	150-275	1/2	25
1/2"	1/8	1/8"	150-300	1/2	25

* All parameters are suggested as basic guidelines and will vary depending on joint design number of passes , and other factors .

SPECIFICATION COMPLIANCE: AISI/AWS A5.18 & ASME SFA 5.18 ER 70S-6

WARNING: PROTECT yourself and others. Read and understand this information.

FUMES AND GASES can be hazardous to your health.

ARC RAYS can injure eyes and burn skin.

ELECTRIC SHOCK can KILL.

- Before use, read and understand the manufacturer's instructions, Material Safety Data Sheets (MSDSs), and your employer's safety practices.
- Keep your head out of fumes.
- Use enough ventilation, exhaust at the arc, or both, to keep fumes and gases from your breathing zone and the general area.
- Wear correct eye, ear, and body protection.
- Do not touch live electrical parts.
- See American National Standard Z49.1, *Safety in Welding, Cutting, and Allied Processes*, published by the American Welding Society, 550 N.W. LeJeune Road, Miami, Florida 33126; OSHA Safety and Health Standards, available from the U.S. Government Office, Washington, DC 20402

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