

PROLONG 70S-3

ER70S-3 Carbon Steel Welding Wire

ER70S-3 is a premium mild steel solid wire, with silicon and manganese levels suitable for general purpose welding over clean to light levels of rust and mill scale. ER70S-3 has the flexibility to provide trouble-free performance in heavy-duty, high-speed spray or pulse applications to lighter duty, lower speed short-arc applications. ER70S-3 is designed for use with various gas mixtures such as 100% CO₂, 75/25 Ar/CO₂ or 98/2 Ar/O₂. Even in the most difficult applications ER70S-3 produces a smooth stable arc with low spatter, producing a weld bead that ties in evenly with the sides and has a smooth finished appearance.

APPLICATION

Frame fabrication, automotive structures, farm implements, construction equipment, pressure vessels, pipe fabrication, railcar construction and repair, general fabrication. Widely used in high-speed robotic and automatic welding applications and semi-automatic applications.

SPECIFICATION COMPLIANCE

AISI/AWS A5.18 & ASME SFA 5.18 ER 70S-3

NOMINAL COMPOSITION

Carbon 0.06-.15%	Chromium 0.15% max
Copper 0.50% max	Vanadium 0.03% max
Manganese 0.90-1.40%	Molybdenum 0.15% max
Silicon 0.45-0.75%	Iron Balance
Sulfur 0.035 % max	Others Total 0.50% max
Phosphorus 0.025% max	
Nickel 0.15% max	

PHYSICAL PROPERTIES

Density lbs/cu in 0.283

TYPICAL MECHANICAL PROPERTIES AS WELDED (GMAW)

Shielding Gas	CO ₂	75%Ar/25%CO ₂	98%Ar/2%O ₂
Tensile Strength (psi)	74-77,000	75-78,000	80-83,000
Yield Strength (psi)	60,400	62-65,000	64-66,200
Elongation in 2'	28%	25.6%	22.2%
Reduction of area	35-70%	35-70%	35-70%
Charpy V-notch ft. lbs.	78-81	63-65	58-61

*RECOMMENDED WELDING PARAMETERS

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

Amps	85-170 Amps	0.023" Dia
------	-------------	------------



P.O. Box 10357
College Station, TX 77842

936-825-2532
sales@dynalloyinc.com

	135-230 Amps	0.030" Dia
	165-300 Amps	0.035" Dia
	200-375 Amps	0.045" Dia
	275-500 Amps	1/16" Dia
	300-600 Amps	3/32" Dia
Volts	23-27 Volts	0.023" Dia
	24-28 Volts	0.030" Dia
	24-28 Volts	0.035" Dia
	24-30 Volts	0.045" Dia
	24-32 Volts	1/16" Dia
	24-33 Volts	3/32" Dia
Argon/ 1-5% O2 (cfh)	25 cfh	0.023" Dia
	25 cfh	0.030" Dia
	30 cfh	0.035" Dia
	30-35 cfh	0.045" Dia
	40 cfh	1/16" Dia
	50 cfh	3/32" Dia
Wire Feed (ipm)	360-620 ipm	0.023" Dia
	390-670 ipm	0.030" Dia
	360-520 ipm	0.035" Dia
	210-390 ipm	0.045" Dia
	150-360 ipm	1/16" Dia
	75-125 ipm	3/32" Dia



P.O. Box 10357
College Station, TX 77842

936-825-2532
sales@dynalloyinc.com

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

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

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

SAFETY INFORMATION:

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

FUMES AND GASES can be hazardous to your health.

HEAT RAYS (INFRARED RADIATION) from flame or hot metal can injure eyes.

• Before use, read and understand the manufacturer's instructions, Material Safety Data Sheet (MSDS) and your employer's safety practices.

• Keep your head out of fumes.

• Use enough ventilation, exhaust at the flame, or both, to keep fumes and gases from your breathing zone and the general area.

• Wear correct eye, ear, and body protection.

• 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

STATEMENT OF LIABILITY — DISCLAIMER Any suggestion of product applications or results is given without representation or warranty, either expressed or implied. Without exception or limitation, there are no warranties of merchantability or of fitness for particular purpose or application. The user must fully evaluate every process and application in all aspects, including suitability, compliance with applicable law and non-infringement of the rights of others. Dynalloy Industries, Inc. and its affiliates shall have no liability in respect thereof.



P.O. Box 10357
College Station, TX 77842

936-825-2532
sales@dynalloyinc.com