

Oxford Alloy[®] 70S-6

AWS ER70S-6 • Mild Steel



Key Features

- ❖ Contains high levels of manganese and silicon for stronger deoxidizing power where stringent cleaning procedures are not possible.
- ❖ The high silicon content increases the fluidity of the weld pool, creating a smoother bead appearance and resulting in minimal post-weld grinding.
- ❖ Designed to provide X-ray quality porosity-free welds and the highest tensile strength (as welded) of the plain carbon steel wires.

Conformances

AWS/ASME SFA 5.18
ER70S-6
UNS K11140

Chemical Composition - As required per AWS 5.18

C	Mn	Si	P	S	Ni	Cr
0.06-0.15	1.40-1.85	0.80-1.15	0.025 max	0.035 max	0.15 max	0.15 max
Mo	V	Cu				
0.15 max	0.03 max	0.50 max				

Mechanical Properties - As required by AWS 5.18

	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	480 (70) min	400 (58) min	22 min
Typical Results - As welded	550 (80)	450 (65)	30

Typical Welding Parameters

Diameter		Process	Volt	Amps	Shielding Gas
in	(mm)				
.035	0.9	GMAW	28-32	165-200	Spray Transfer 98% Argon + 2% Oxygen or 75% Argon + 25% CO ₂
.045	1.2	GMAW	30-34	180-220	
1/16	1.6	GMAW	30-34	230-260	
.035	0.9	GMAW	22-25	100-140	Short Circuiting Transfer 100% CO ₂ or 75% Argon + 25% CO ₂
.045	1.2	GMAW	23-26	120-150	
1/16	1.6	GMAW	23-26	160-200	
1/16	1.6	GTAW	12-15	100-125	100% Argon
3/32	2.4	GTAW	15-20	125-175	100% Argon
1/8	3.2	GTAW	15-20	175-250	100% Argon

Diameters & Packaging

Oxford Alloys USA			Oxford Alloys Asia Pacific		
Diameter (in)	Form	Packaging (lbs)	Diameter (mm)	Form	Packaging (kgs)
.035	GMAW	33 lb spool 1980 lb pallet	0.9	GMAW	15 kg spool 900 kg pallet
.045	GMAW	33 lb spool 1980 lb pallet	1.2	GMAW	15 kg spool 900 kg pallet
1/16	GMAW	33 lb spool 1980 lb pallet	1.6	GMAW	15 kg spool 900 kg pallet
1/16	GTAW	10 lb tube 40 lb carton	1.6	GTAW	5 kg tube 20 kg carton
3/32	GTAW	10 lb tube 40 lb carton	2.4	GTAW	5 kg tube 20 kg carton
1/8	GTAW	10 lb tube 40 lb carton	3.2	GTAW	5 kg tube 20 kg carton

Actual test results may vary. Refer test result disclaimer on page 160.