Nickel Alloys
Oxford Alloy 60
Oxford Alloy 82
Oxford Alloy 625

Stainless Steel
Oxford Alloy 308/308H
Oxford Alloy 308/308L
Oxford Alloy 309/309L
Oxford Alloy 309LMo
Oxford Alloy 316/316L
Oxford Alloy 317L
Oxford Alloy 347

Duplex & Super Duplex
Oxford Alloy 2209
Oxford Alloy 2594

Chrome Moly
Oxford Alloy EB2
Oxford Alloy EB3
Oxford Alloy EB6
Oxford Alloy EB8

Flux
Oxford Alloy NI-Flux
Oxford Alloy OXF300 Flux

SAW & FLUX

Oxford Alloy® 60

AWS ERNiCu-7 • Nickel Alloys

Key Features

- Dissimilar welding applications include joining alloys to Nickel 200 and copper-nickel alloys.
- Widely used in marine applications because of its good resistance to the corrosive effects of seawater and brackish waters.

Conformances

AWS/ASME SFA 5.14
ERNiCu-7
UNS N04060

Chemical Composition - As required per AWS 5.14						
Ni	**C**	**Mn**	**Fe**	**Si**	**Cu**	**Al**
62.0-69.0	0.15 max	4.0 max	2.5 max	1.25 max	Bal	1.25 max
Ti	**P**	**S**	**OET**			
1.5-3.0	0.02 max	0.015 max	0.50 max			

Mechanical Properties - As required by AWS 5.14			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	480 (70) typical	Not Specified	Not Specified
Typical Results - As welded	530 (77)	360 (53)	34

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-30	275-350	Suitable Flux
1/8	3.2	SAW	29-32	350-450	NiCrW

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® 82

AWS ERNiCr-3 • Nickel Alloys

Key Features

- For welding of base materials such as ASTM B163, B166, B167 and B168 – alloys which have UNS Number N06600.
- Suitable for applications ranging from cryogenic to high temperatures making this alloy one of the most used in the nickel family.
- Also be used for dissimilar welding applications between various nickel alloys and stainless or carbon steels, as well as for overlay.

Conformances

AWS/ASME SFA 5.14
ERNiCr-3
UNS N06082

Chemical Composition - As required per AWS 5.14						
Ni	**C**	**Mn**	**Fe**	**S**	**Si**	**Cr**
67.0 min	0.10 max	2.5-3.5	3.0 max	0.015 max	0.50 max	18.0-22.0
Ti	**P**	**Nb+Ta**	**Cu**	**OET**		
0.75 max	0.03 max	2.0-3.0	0.50 max	0.50 max		

Mechanical Properties - As required by AWS 5.14			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	550 (80) typical	Not Specified	Not Specified
Typical Results - As welded	460 (67)	260 (38)	28

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-30	275-350	Suitable Flux
1/8	3.2	SAW	29-32	350-450	NiCrW

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® 625

AWS ERNiCrMo-3 • Nickel Alloys

Key Features

- Contains low iron (Fe less than 1%) and is used for welding of nickel-chromium-molybdenum alloys.
- Also for cladding and welding dissimilar base metals such as Ni-Cr-Mo alloys to stainless and carbon steels.
- The Ni-Cr-Mo alloy system provides excellent resistance to oxidizing and reducing environments. The high molybdenum content provides good stress, pitting and crevice corrosion resistance.

Conformances

AWS/ASME SFA 5.14
ERNiCrMo-3
UNS N06625
ABS Approved

Chemical Composition - As required per AWS 5.14						
Ni	**C**	**Mn**	**Fe**	**S**	**Si**	**P**
58.0 min	0.10 max	0.50 max	5.0 max	0.015 max	0.50 max	0.02 max
Cr	**Al**	**Nb+Ta**	**Mo**	**Ti**	**Cu**	**OET**
20.0-23.0	0.40 max	3.15-4.15	8.0-10.0	0.40 max	0.50 max	0.50 max

Mechanical Properties - As required by AWS 5.14			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	760 (110) typical	Not Specified	Not Specified
Typical Results - As welded	790 (115)	590 (85)	35

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-30	275-350	NiCrW
1/8	3.2	SAW	29-32	350-450	NI-Flux

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® 308/308H

AWS ER308/308H • Stainless Steel

Key Features

- Used to weld unstabilized austenitic stainless steels such as 302, 304H and 305.
- Provides a high carbon deposit (minimum of .04% carbon) for high temperature applications.

Conformances

AWS/ASME SFA 5.9
ER308/308H
UNS S30880

Chemical Composition - As required per AWS 5.9						
C	**Mn**	**Si**	**Cr**	**Ni**	**S**	**P**
0.04-0.08	1.0-2.5	0.30-0.65	19.5-22.0	9.0-11.0	0.03 max	0.03 max
Mo	**Cu**					
0.50 max	0.75 max					

Mechanical Properties - As required by AWS 5.9			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	Not Specified		
Typical Results - As welded	600 (87)	410 (59)	41

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-30	275-350	OXF 300
1/8	3.2	SAW	29-32	350-450	OXF 300

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® 308/308L

AWS ER308/308L • Stainless Steel

Key Features

- Weld deposit with reduced carbon levels (0.04% max) that offers increased resistance to inter-granular corrosion.
- Type 308L is ideal for welding Type 304L stainless steels.

Conformances

AWS/ASME SFA 5.9
ER308/308L
UNS S30883

Chemical Composition - As required per AWS 5.9						
C	**Mn**	**Si**	**Cr**	**Ni**	**S**	**P**
0.03 max	1.0-2.5	0.30-0.65	19.5-22.0	9.0-11.0	0.03 max	0.03 max
Mo	**Cu**					
0.75 max	0.75 max					

Mechanical Properties - As required by AWS 5.9			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	Not Specified		
Typical Results - As welded	580 (84)	400 (58)	42

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-30	275-350	OXF 300
1/8	3.2	SAW	29-32	350-450	OXF 300

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® 309/309L

AWS ER309/309L • Stainless Steel

Key Features

- Reduced carbon levels (0.04% max) that offers increased resistance to inter-granular corrosion.
- Type 309/309L is ideal for joining stainless steels to themselves or to carbon or low alloy steels.
- Can be used at temperatures of up to 700°F (371°C).

Conformances

AWS/ASME SFA 5.9
ER309/309L
UNS S30983

Chemical Composition - As required per AWS 5.9						
C	**Cr**	**Ni**	**Mo**	**Mn**	**Si**	**P**
0.03 max	23.0-25.0	12.0-14.0	0.75 max	1.0-2.5	0.30-0.65	0.03 max
S	**Cu**					
0.03 max	0.75 max					

Mechanical Properties - As required by AWS 5.9			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	Not Specified		
Typical Results - As welded	590 (86)	400 (58)	40

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-30	275-350	OXF 300
1/8	3.2	SAW	29-32	350-450	OXF 300

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® 309LMo

ER309LMo • Stainless Steel

Key Features

- Similar to 309 with the exception for the addition of 2.0 - 3.0% molybdenum to increase its pitting corrosion resistance in halide-containing environments.
- Primary application for this filler metal is surfacing of base metals to improve their resistance to corrosion. The 309LMo is used to achieve a single-layer overlay with a chemical composition similar to that of a 316L stainless steel.
- Also used for the first layer of a multilayer overlays with filler metals such as 316L or 317L stainless steel.

Conformances

BS EN ISO 14343:2009 23 12 2L

Chemical Composition - As per typical heat						
C	**Si**	**Cr**	**Ni**	**Mo**	**Mn**	**S**
0.03 max	1.00 max	21.0-25.0	11.0-15.5	2.0-3.5	1.0-2.5	0.02 max
P	**Cu**	**OET**				
0.03 max	0.50 max	0.50 max				

Mechanical Properties - As per typical heat			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	Not Specified		
Typical Results - As welded	620 (90)	440 (64)	42

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-30	275-350	OXF 300
1/8	3.2	SAW	29-32	350-450	OXF 300

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® 316/316L

AWS ER316/316L • Stainless Steel

Key Features

- For welding 316L base metals.
- The 2-3% molybdenum in the electrode improves pitting corrosion resistance of the weld deposit.
- Low carbon content reduces the possibility of carbide precipitation and intergranular corrosion.

Conformances

AWS/ASME SFA 5.9
ER316/316L
UNS S31683

Chemical Composition - As required per AWS 5.9						
C	**Mn**	**Si**	**Cr**	**Ni**	**Mo**	**S**
0.03 max	1.0-2.5	0.30-0.65	18.0-20.0	11.0-14.0	2.0-3.0	0.03 max
P	**Cu**					
0.30 max	0.75 max					

Mechanical Properties - As required by AWS 5.9			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	Not Specified		
Typical Results - As welded	550 (80)	380 (55)	40

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-30	275-350	OXF 300
1/8	3.2	SAW	29-32	350-450	OXF 300

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® 317L

AWS ER317L • Stainless Steel

Key Features

- Weld deposit similar to 316L with a higher molybdenum content.
- Used for welding alloys with similar compositions used in highly corrosive environments.

Conformances

AWS/ASME SFA 5.9
ER317L
UNS S31783

Chemical Composition - As required per AWS 5.9						
C	**Mn**	**Si**	**Cr**	**Ni**	**S**	**P**
0.03 max	1.0-2.5	0.30-0.65	18.5-20.5	13.0-15.0	0.03 max	0.03 max
Cu	**Mo**					
0.75 max	3.0-4.0					

Mechanical Properties - As required by AWS 5.9			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	Not Specified		
Typical Results - As welded	570 (83)	410 (60)	42

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-30	275-350	OXF 300
1/8	3.2	SAW	29-32	350-450	OXF 300

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® 347

AWS ER347 • Stainless Steel

Key Features

- Niobium stabilized stainless steel used for the welding of types 347 and 321 stainless and stainless clad steels.
- The addition of niobium reduces intergranular corrosion in severe operating conditions.

Conformances

AWS/ASME SFA 5.9
ER347
UNS S34780

Chemical Composition - As required per AWS 5.9						
C	**Mn**	**Si**	**Cr**	**Ni**	**Mo**	**S**
0.08 max	1.0-2.5	0.30-0.65	19.0-21.5	9.0-11.0	0.75 max	0.03 max
P	**Cu**	**Nb+Ta**				
0.03 max	0.75 max	10 X C min / 1.0 max				

Mechanical Properties - As required by AWS 5.9			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	Not Specified		
Typical Results - As welded	620 (90)	450 (65)	41

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-30	275-350	OXF 300
1/8	3.2	SAW	29-32	350-450	OXF 300

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® 2209

AWS ER2209 • Duplex

Key Features

- Used to weld duplex stainless steels such as (Type 2205).
- The welds offer excellent resistance to stress corrosion, cracking and pitting. The microstructure of the weld metal consists of austenite and ferrite.
- Welding of duplex stainless steels calls for controlled welding parameters to achieve specified mechanical and corrosion resistant properties.

Conformances

AWS/ASME SFA 5.9
ER2209
UNS S39209

Chemical Composition - As required per AWS 5.9						
C	**Mn**	**Si**	**Cr**	**Ni**	**Mo**	**S**
0.03 max	0.50-2.0	0.90 max	21.5-23.5	7.5-9.5	2.5-3.5	0.03 max
P	**Cu**	**N**				
0.03 max	0.75 max	0.08-0.20				

Mechanical Properties - As required by AWS 5.9			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	Not Specified		
Typical Results - As welded	720 (104)	560 (81)	26

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-30	275-350	Suitable Flux
1/8	3.2	SAW	29-32	350-450	Suitable Flux

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® 2594

AWS ER2594 • Super Duplex

Key Features

- Super-duplex grade that provides matching chemistry and mechanical property characteristics to wrought super-duplex alloys such as 2507 and Zeron 100, as well as to super-duplex casting alloys (ATSM A890).
- Over-alloyed 2-3% in nickel to provide the optimum ferrite/austenite ratio in the finished weld. This structure results in high tensile and yield strengths and superior resistance to stress corrosion cracking (SCC) and pitting corrosion.

Conformances

AWS/ASME SFA 5.9
ER2594
UNS S32750

Chemical Composition - As required per AWS 5.9						
C	**Cr**	**Ni**	**Mo**	**Mn**	**Si**	**P**
0.03 max	24.0-27.0	8.0-10.5	2.5-4.5	2.5 max	1.0 max	0.03 max
S	**N**	**Cu**	**W**			
0.02 max	0.20-0.30	1.5 max	1.0 max			

Mechanical Properties - As required by AWS 5.9			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	Not Specified		
Typical Results - As welded	650 (94)	850 (123)	28

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-30	275-350	Suitable Flux
1/8	3.2	SAW	29-32	350-450	Suitable Flux

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® EB2

AWS EB2 • Chrome Moly

Key Features

- A 1-1/4 Cr / .5 Mo wire for submerged arc welding applications of steels with similar chemical composition.
- A preheat and interpass temperature of not less than 300°F should be maintained during welding.
- Sometimes referred to as 515.

Conformances

AWS/ASME SFA 5.23
EB2
UNS K11172

Chemical Composition – As per AWS 5.23						
C	**Mn**	**Si**	**Cr**	**Mo**	**S**	**P**
0.07-0.15	0.45-1.00	0.05-0.30	1.00-1.75	0.45-0.65	0.025 max	0.025 max
Cu						
0.35 max						

Mechanical Properties - As per typical heat with suitable flux			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
Typical Results - As welded	580 (85)	490 (71)	22

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-32	250-400	Suitable Flux
1/8	3.2	SAW	30-34	400-600	Suitable Flux

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® EB3

AWS EB3 • Chrome Moly

Key Features

- A 2-1/2 Cr / 1 Mo wire for submerged arc welding applications of steels with similar chemical composition.
- A preheat and interpass temperature of not less than 350°F should be maintained during welding.
- Sometimes referred to as 521.

Conformances

AWS/ASME SFA 5.23
EB3
UNS K31115

Chemical Composition – As per AWS 5.23						
C	**Mn**	**Si**	**Cr**	**Mo**	**P**	**S**
0.05-0.15	0.40-0.80	0.05-0.30	2.25-3.0	0.90-1.10	0.025 max	0.025 max
Cu						
0.35 max						

Mechanical Properties - As per typical heat with suitable flux			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
Typical Results - As welded	650 (95)	560 (81)	19

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-32	250-400	Suitable Flux
1/8	3.2	SAW	30-34	400-600	Suitable Flux

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® EB6

AWS EB6 • Chrome Moly

Key Features

- Designed for submerged arc welding applications of materials of similar composition, for high temperature service conditions.
- This is an air-hardening material and as such calls for preheat and interpass temperatures of 350°F minimum during welding.
- Sometimes referred to as 502.

Conformances

AWS/ASME SFA 5.23
EB6
UNS S50280

Chemical Composition – As per AWS 5.23						
C	**Mn**	**Si**	**Cr**	**Mo**	**P**	**S**
0.10 max	0.35-0.70	0.05-0.50	4.50-6.50	0.45-0.70	0.025 max	0.025 max
Cu						
0.35 max						

Mechanical Properties - As per typical heat with suitable flux			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
Typical Results - As welded	540 (79)	420 (61)	32

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-32	250-400	Suitable Flux
1/8	3.2	SAW	30-34	400-600	Suitable Flux

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® EB8

AWS EB8 • Chrome Moly

Key Features

- Designed for submerged arc welding applications of materials of similar composition.
- This alloy, being an air-hardening type, calls for preheat and interpass temperatures of not less than 350°F during welding.
- Sometimes referred to as 505.

Conformances

AWS/ASME SFA 5.23
EB8
UNS S50480

Chemical Composition – As per AWS 5.23						
C	**Mn**	**Si**	**Cr**	**Mo**	**P**	**S**
0.10 max	0.30-0.65	0.05-0.50	8.0-10.50	0.80-1.20	0.025 max	0.025 max
Cu						
0.35 max						

Mechanical Properties - As per typical heat with suitable flux			
	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
Typical Results - As welded	550 (79)	430 (63)	30

Typical Welding Parameters					
Diameter		**Process**	**Volt**	**Amps**	**SAW Flux**
in	**(mm)**				
3/32	2.4	SAW	28-32	250-400	Suitable Flux
1/8	3.2	SAW	30-34	400-600	Suitable Flux

Diameters & Packaging					
Oxford Alloys USA			**Oxford Alloys Asia Pacific**		
Diameter (in)	**Form**	**Packaging (lbs)**	**Diameter (mm)**	**Form**	**Packaging (kgs)**
3/32	SAW	60 lb Coil | 1800 lb pallet	2.4	SAW	25 kg Coil | 750 kg pallet
1/8	SAW	60 lb Coil | 1800 lb pallet	3.2	SAW	25 kg Coil | 750 kg pallet

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

Oxford Alloy® NI-Flux

Flux

Key Features

- Fused submerged Arc welding flux designed for wire welding with corrosion resistant nickel-chromium-molybdenum alloys such as Alloy 625 (ERNICrMo-3) and Alloy C-276 (ERNiCrMo-4)
- Often used for groove welding of 9% nickel steels in the production of LNG storage tanks.
- Can also be used for groove and overlay welding using austenitic stainless steels and low alloy chromium-molybdenum alloys.

Characteristics

Bulk Density 1.5 kg / dm^3
Basicity Index 1.3 (Boniszewski)
Particle size 1-20 (EN760) 10 x 150 (Tyler Mesh)

Conformances

EN 760
SF CS 2 DC
SF CS 1 63 DC

Application

Flux for groove and overlay welding with the following SAW wires:
ERNiCrMo-3 ERNiCrMo-4
EB2 EB3 EB6 EB8

Deposit Chemical Composition
- Typical with combination of listed SAW wire

SAW Wire	C	Si	Mn	Cr	Ni	Mo
ERNiCrMo-3	0.04	0.60	0.50	20.0-22.5	58.0	8.0-10.0
ERNiCrMo-4	0.03	0.40	1.00	14.5-16.0	50.0	15.0-17.0

Mechanical Properties
- Typical with combination of listed SAW wire

SAW Wire	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
ERNiCrMo-3	740 (107)	440 (64)	30
ERNiCrMo-4	700 (102)	400 (58)	35

Typical Welding Parameters

Diameter	Amperage	Voltage	Travel Speed	Extension	Flux Depth
Groove and overlay welding using DCEP current and stringer beads					
3/32" (2.4mm)	250-300	30-33	8-11 inch/min	7/8-1 inch	3/4-1 inch
			200-280 mm/min	22-25 mm	19-25 mm
Overlay welding with Oscillation using DCEN current and Oscillation frequency of 35-60 cycles/min.					
3/32" (2.4mm)	300-400	34-37	4 inch/min	7/8-1 inch	3/4-1 1/4 inch
			100 mm/min	22-25 mm	19-32 mm

Diameters & Packaging

Oxford Alloys USA		Oxford Alloys Asia Pacific	
Form	Packaging (lbs)	Form	Packaging (kgs)
FLUX	44 lb Polyethylene Bags	FLUX	20 kg Polyethylene Bags

Flux Care: See page 157 for important information on flux storage and handling

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

Oxford Alloy® OXF300 Flux

Flux

Key Features

- Designed for welding mild and medium-carbon steels.
- Basic non-alloyed agglomerated flux.
- General purpose flux designed for butt welding with standard Cr-Ni and Cr-Ni-Mo fillers
- Also be used for cladding unalloyed or low-alloy steel.
- Provides neat weld surfaces, very good welding properties and easy slag removal.

Characteristics

Bulk Density 1.1 kg / dm
Basicity index 2.7 (Boniszewski)
Flux consumption 0.5 kg flux / kg wire (26V)

Conformance

EN ISO 14174
EN 760
SA FB 2 64 DC

Application

Flux for welding with stainless steel subarc arc wire including the following grades:

ER308L	ER309L	ER309LMo	ER316L
ER317L	ER347	ER2209	ER2594

Deposit Chemical Composition
– typical with combination of listed SAW wire

SAW WIRE	C	Cr	Ni	Mn	Si	Mo
308L	0.02	19.5	10.0	1.2	0.6	
316L	0.02	18.5	12.0	1.2	0.6	2.6

Mechanical Properties
- Typical with combination of listed SAW wire

SAW Wire	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
ER308L	550 (80)	380 (55)	40
ER316L	540 (78)	380 (55)	40

Typical Welding Parameters

Diameter	Amperage	Voltage	Speed (Cm/Min)
3/32" (2.4mm)	300 - 400	29 - 33	40 - 60
1/8" (3.2mm)	350 - 500	29 - 33	40 - 60
5/32" (4.0mm)	400 - 600	30 - 36	40 - 60

Diameters & Packaging

Oxford Alloys USA		Oxford Alloys Asia Pacific	
Form	Packaging (lbs)	Form	Packaging (kgs)
FLUX	50 lb Buckets	FLUX	25 kg Buckets

Flux Care: See page 157 for important information on flux storage and handling

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