

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	Shielding Gas
in	(mm)				
.035	0.9	GMAW	22-23	180-210	Spray Transfer 98% Argon / 2% Oxygen
.045	1.2	GMAW	23-25	195-260	
1/16	1.6	GMAW	25-28	260-390	
.035	0.9	GMAW	19-23	55-170	Short Circuiting Transfer 90% Helium / 7 1/2 % Argon / 2 1/2 CO ₂
.045	1.2	GMAW	19-23	100-185	
1/16	1.6	GMAW			
1/16	1.6	GTAW	14-18	90-130	100% Argon
3/32	2.4	GTAW	15-20	120-175	100% Argon
1/8	3.2	GTAW	15-20	150-220	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.