



**W.A. ALLOY CO.**

WASHINGTON ALLOY'S Quality  
Management System is  
Certified to **ISO 9001:2008**  
Cert # 05-R0925

# 2209 Welding Wire and Rod

U.S. ALLOY CO.  
dba Washington Alloy  
7010-G Reames Rd.  
Charlotte, NC 28216  
[www.weldingwire.com](http://www.weldingwire.com)



**American Welding Society**  
Sustaining Company Member



## ALLOY DESCRIPTION AND APPLICATION;

2209 is a duplex stainless steel with about 22% chromium used for welding matching or similar alloys found in ASTM A182, A276, A329, UNS S31803(F51), S32205 (F60), 2003, 2101, 2205, 2304 (35N), 44LN, UR 45N, A903, 4462, 19035C, AF22, 223, 3RE60, NKCr22, SM22Cr. Also found when welding dissimilar base metals such as 25Cr & Super duplex to 304 or 316 types of stainless steels. Interpass temperature 300° F max and heat input of 10-30 kJ/in.; Heat Input = Voltage x Amperage x 6 % Travel Speed (inch/Minute) x 100. Weld metal should have very good resistance to stress corrosion cracking and pitting with an austenite & 30-50 % ferrite matrix.

STAINLESS STEELS MAY REQUIRE PICKING TO RESTORE CORROSION RESISTANCE

## TYPICAL GMAW WELDING PROCEDURES; DCEP (Shielding gas = Ar+15-30%He+1-3%CO<sub>2</sub>)

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stick-out	Tri-mix (cfh)
0.023	180-400	30-85	14-19	3/8-1/2"	20-25
0.030	150-350	45-125	15-20	3/8-1/2"	20-25
0.035	120-330	60-150	16-22	3/8-1/2"	20-30
0.045	100-280	90-210	17-22	3/8-1/2"	25-30
<i>Spray</i> 0.030	280-600	160-220	24-28	3/8-1/2"	<sup>(1)</sup> 25-35
0.035	250-470	170-295	23-29	1/2-3/4"	<sup>(1)</sup> 25-35
0.045	200-385	195-360	24-30	1/2-3/4"	<sup>(1)</sup> 30-35
1/16"	110-200	210-380	25-31	1/2-3/4"	<sup>(1)</sup> 35-40

<sup>(1)</sup> 98%Ar  
2%O<sub>2</sub>

## TYPICAL GTAW WELDING PROCEDURES; DCEN with EWTh-2 truncated conical tip

Filler Wire Size	Tungsten	Amps	Volts	Gas Cup Size	Argon (cfh)	Base thickness
1/16"	1/16"	80-150	10-12	3/8"	20	1/16-1/8"
3/32"	3/32"	150-250	15-18	3/8"	20	1/8- 3/16"
1/8"	1/8"	200-375	16-20	1/2"	25	1/4-1/2"

Addition of up to 2% nitrogen to the shielding gas may be advantageous when welding

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.

## TYPICAL WIRE CHEMISTRY (%) & WELD METAL PROPERTIES (AWS Spec.)

Carbon	0.03 max	Tensile Strength (psi)	100,000 min
Manganese	0.50-2.00	Elongation	20 % min
Silicon	0.90 max	<i>Pitting Resistance Equivalent Number (PRE<sub>N</sub>) &gt;35</i>	
Molybdenum	2.5-3.5	<i>(TYPICAL not AWS REQUIREMENT)</i>	
Nickel	7.5-9.5	Phosphorus	0.03 max
Chromium	21.5-23.5	Sulfur	0.03 max
Copper	0.75 max	Nitrogen	0.08-0.20

**AVAILABLE SIZES:** TS 2209= Spools of .035, .045, 1/16, 3/32

TT 2209 = Cut lengths of .035, .045, 1/16, 3/32, 1/8, 5/32

Other sizes available – please inquire

**SPECIFICATIONS;** ANSI/AWS A5.9 ER2209 , **ISO 14343A** 22 9 3 N L

ASME SFA 5.9 ER2209 , **ISO 14343B** SS2209

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