



WASHINGTON ALLOY'S Quality
Management System is
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Cert # 05-R0925

307Si Welding Wire and Rod

U.S. ALLOY CO.
dba Washington Alloy
7010-G Reames Rd.
Charlotte, NC 28216
www.weldingwire.com



American Welding Society
Sustaining Company Member



ALLOY DESCRIPTION AND APPLICATION;

307Si is an austenitic stainless steel with added manganese and silicon compared to the AWS 307 grades. Used for joining and surfacing applications involving work-hardenable steels, armour plate, heat resistant steels and subjected to temperatures up to 1560 F and dissimilar steels such as austenitic manganese steels to carbon steel forgings and castings. Weld deposits are porosity free, crack and corrosion resistant. (Tri-mix gas = 90%He+7.5%Ar+2.5%CO₂)

TYPICAL GMAW WELDING PROCEDURES; DCEP Short Circuit

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 0.030</i>	<i>280-600</i>	<i>160-220</i>	<i>24-28</i>	<i>3/8-1/2"</i>	<i>(1)25-35</i>
<i>0.035</i>	<i>250-470</i>	<i>170-295</i>	<i>23-29</i>	<i>1/2-3/4"</i>	<i>(1)25-35</i>
<i>0.045</i>	<i>200-385</i>	<i>195-360</i>	<i>24-30</i>	<i>1/2-3/4"</i>	<i>(1)30-35</i>
<i>1/16"</i>	<i>110-200</i>	<i>210-380</i>	<i>25-31</i>	<i>1/2-3/4"</i>	<i>(1)35-40</i>

(1) 98%Ar
2%O₂

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	12	3/8"	20	1/16-1/8"
3/32"	3/32"	150-250	12	3/8"	20	1/8- 3/16"
1/8"	1/8"	200-375	12	1/2"	25	1/4-1/2"

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

TYPICAL WIRE CHEMISTRY RANGE (%) & WELD METAL PROPERTIES

Carbon	0.08	Tensile Strength (psi)	94,000
Manganese	6.77	Yield Strength (psi)	67,000
Silicon	0.85	Elongation	41 %
Molybdenum	0.05		
Nickel	8.0	Phosphorus	0.03 max
Chromium	18.5	Sulfur	0.03 max
Copper	0.15		

AVAILABLE SIZES: TS 307Si= Spools

TT 307Si= Cut lengths

Other sizes available – please inquire

SPECIFICATIONS; ANSI/AWS A5.9 ER307 modified
ASME SFA 5.9 ER307 modified

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