



410 Welding Wire and Rod

U.S. ALLOY CO.
dba Washington Alloy
7010-G Reames Rd.
Charlotte, NC 28216
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American Welding Society
Sustaining Company Member



ALLOY DESCRIPTION AND APPLICATION;

USA 410 stainless steel welding wire is used to weld straight chromium steels such as AISI types 403, 405, 410, 414 and 416. It is also used as an overlay on carbon steels to give added resistance against corrosion and abrasion. Preheat / interpass of 350-500°F and postheat treatment of 1350-1400°F for 1hour per inch with slow cool may be required. (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.

Pre-heat & postheat recommended

TYPICAL WIRE CHEMISTRY (%) & WELD METAL PROPERTIES*

Carbon	0.08	Tensile Strength (psi)	80,000
Manganese	0.50	Yield Strength (psi)	44,000
Silicon	0.40	Elongation	26 %
Molybdenum	0.15		
Sulfur	0.03	* Pre-heat & post heat required	
Chromium	12.90		
Nickel	0.40		

AVAILABLE SIZES: TS 410= Spools of 030, 035, 045, 1/16, 3/32
TT 410 = Cut lengths of 030, 035, 045, 1/16, 3/32, 1/8, 3/16
Other sizes available – please inquire

SPECIFICATIONS; ANSI/AWS A5.9 ER410
ASME SFA 5.9 ER410

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