



WA. ALLOY CO.

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

TENSILEWELD 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;

Washington Alloy Tensileweld is a chromium-nickel high strength alloy that produces a unique austenitic-ferritic structure that yields a dense non-cracking weldment. Fine-grained delta ferrite in a rich austenitic matrix often used on these types of base metals; manganese steel, high carbon steel spring steel, cast steels, die & tool steels, clad steels, stainless steel and many unknown grades of base metals. This results in extremely crack-resistant, tough welds having very high strength (up to 122,000 psi as welded) coupled with up to 35% elongation. The deposits are readily machined having a hardness of 22-23 RC (236 BHN). The weld deposits are non heat-treatable but work-harden and provide resistance to heat, corrosion, abrasion, and impact. Tensileweld can be used for joining, and building-up all AISI types of tool steels as well as an excellent underlay (buffer layer) for harder deposits.

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

⁽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.

Some base metals may require preheat –will not respond to heat-treatment but may work harden in some cases

TYPICAL WIRE CHEMISTRY (%) & WELD METAL PROPERTIES

Carbon	0.12	Tensile Strength (psi)	122,000
Manganese	1.70	Yield Strength (psi)	90,000
Silicon	0.50	Elongation	35 %
Nickel	9.50	Hardness Rockwell B	237 (RC 24)
Chromium	29.50		

AVAILABLE SIZES: TU TENSILEWELD = Spools of 035, 045, 1/16

TU TENSILEWELD = Cut lengths of 023, 030, 035, 045, 1/16, 3/32, 1/8, 5/32, 3/16

Other sizes may be available

SPECIFICATIONS; Internal

EAST COAST

7010-G Reames Rd
Charlotte, NC 28216
Tel (888) 522-8296
Fax (704)598-6673

GULF COAST

4755 Alpine Drive #100A
Stafford, TX 77477
Tel (877) 711-9274
Fax (281)313-6332

WEST COAST

8535 Utica Ave
Rancho Cucamonga, CA 91730
Tel (800)830-9033
Fax (909)291-4586



2017 DC

Warehouse Distribution Center – Portland, Oregon & Boston, Massachusetts

Head Office – Puyallup, Washington

Washington Alloy Company believes that all information and data given is correct. Use this information to assist in making your own evaluations or decisions and this information should not be mistaken as an expressed or implied warranty. U.S. ALLOY CO. assumes no liability for results or damages incurred from the use of any information contained herein, in whole or in part.