



Quality Management System
in accordance with
ISO 9001:2000
Cert # 05-R0925

4643 ALUMINUM Welding wire

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



ALLOY DESCRIPTION AND APPLICATION;

4643 is a 4% silicon aluminum filler which contains a small amount of magnesium and primary recommended for welding

of thick or heavy 6xxx series base metals when postweld heat treating may follow. This alloy provides better response to solution heat treating and is less dependant on the dilution to achieve the needed properties as found in the common 4043 alloy.

TYPICAL GMAW WELDING PROCEDURES; DCEP

Wire Diameter	Amps	Volts	Travel speed (ipm)	Argon (cfh)
0.030	60-175	15-24	25-45	25-30
0.035	70-185	15-27	25-40	30-35
3/64	125-260	20-29	24-35	35-45
1/16	170-300	24-30	28-38	45-55
3/32	275-400	26-31	14-20	60-75

TYPICAL GTAW WELDING PROCEDURES; ACHF with Pure or Ziconiated Hemisphere shape tungsten tip

Filler Wire Size	Tungsten	Amps	Volts	Gas Cup Size	Argon (cfh)	Base thickness
1/16"	1/16"	60-80	15	3/8"	20	1/16"
3/32"	3/32"	125-160	15	3/8"	20	1/8"
1/8"	1/8"	190-220	15	7/16"	20	3/16"
5/32"	5/32"	200-300	15	1/2"	25	1/4"
3/16"	3/16"	330-380	15-20	5/8"	25	3/8"
1/4"	1/4"	400-450	25	5/8"	25	1/2"

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

TYPICAL CHEMISTRY AND PROPERTIES;

Silicon 3.6-4.6	Iron 0.80	Copper 0.10	Manganese 0.05	Magnesium 0.10-0.30	Zinc 0.10	Titanium 0.15	Beryllium 0.0008
Aluminum Remainder and others each 0.50 & total 0.15				All values are maximum percentage unless noted			
Solidus: 1065°F		Liquidus: 1175°F		Density: 0.097 lbs./cu. In.		Anodize color: Gray	
Average Tensile Strength All weld metal (as welded) 30,000 psi (207 mpa)							

AVAILABLE SIZES: TB 4643 = Cut lengths of 3/64, 1/16, 5/64, 3/32, 1/8

SPECIFICATIONS; ANSI/AWS A5.10 ER/ R 4643
ASME SFA5.10 ER/ R 4643
AMS 4189

Other sizes available – please inquire



5-2008 DC

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

GULF COAST
4855 Alpine Drive #190
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

Warehouse Distribution Center – Dayton, Ohio

Head Office – Puyallup, Washington

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