



XTR 0.3% Zirconiated

Tungsten EWZr-1 (WZr 3)

Description:

Tungsten is a rare metallic element used for manufacturing gas tungsten arc welding (GTAW) electrodes. The GTAW process relies on tungsten's hardness and high-temperature resistance to carry the welding current to the arc. Tungsten has the highest melting point of any metal, 3,410 degrees Celsius.

Typical Applications:

Zirconiated tungsten electrodes (AWS classification EWZr-1) contain a minimum of 99.10 percent tungsten and 0.15 to 0.40 percent zirconium. A zirconiated tungsten electrode produces an extremely stable arc and resists tungsten spitting. It is ideal for AC welding because it retains a balled tip and has a high resistance to contamination. Its current-carrying capability is equal to or greater than that of thoriated tungsten. Under no circumstances is zirconiated recommended for DC welding.

Standards, Specifications, Typical Analysis:

Classification	EWZr-1 – ANSI/AWS A5.12, ISO6848			
Principle Oxide, Mass Percent	ZrO ₂ 0.15-0.50%,	Impurities Mass Percent:	0.5% Max,	Tungsten (W) Balance
Color Code per AWS	Brown #A52A2A			



	1.5% & 2% Lanthanated (Gold) (Blue)	0.8% Zirconiated (White)	2% Thoriated (Red)	2% Ceriated (Gray)	Pure (Green)
AC Current	✓	✓		✓	✓
DC Current	✓		✓	✓	
Aluminum	✓	✓		✓	✓
Mild Steel	✓		✓	✓	
Stainless Steel	✓		✓	✓	
Copper Alloys	✓		✓	✓	
Titanium	✓		✓	✓	
ARC Ignition	5	5	5	4	4
Tungsten Life	4	3	5	4	4
ARC Stability	4	5	5	4	4
AC Performance	4 5	5	-	3	3
Contamination Resistance	3	5	5	4	3

Information provided is a guide, individual results may vary depending on welders skill level, machine & base metal

✓ means a good or great performance

Numbers 1-5, 5 being very good/excellent and 1 meaning not very good

Approximate current/amperage ranges:

Diameter		Direct Current (DC)*				Alternating Current (AC)*	
Inch	MM	Electrode Negative (-)		Electrode Positive (+)		Pure Tungsten	With Oxide
		Pure Tungsten	With Oxide	Pure Tungsten	With Oxide	Pure Tungsten	With Oxide
.020	0.50	2 to 20	2 to 20	Na	Na	2 to 15	2 to 15
.040	1.00	10 to 75	10 to 75	Na	Na	15 to 55	15 to 70
1/16	1.6	60 to 150	60 to 150	10 to 20	10 to 20	45 to 90	60 to 125
3/32	2.4	120 to 220	150 to 250	15 to 30	15 to 30	80 to 140	120 to 210
1/8	3.2	160 to 310	225 to 330	20 to 35	20 to 35	150 to 190	150 to 250
5/32	4.0	275 to 450	350 to 480	35 to 50	35 to 50	180 to 260	240 to 350
3/16	4.8	380 to 600	480 to 650	50 to 70	50 to 70	240 to 350	330 to 450
1/4	6.4	575 to 900	750 to 1000	70 to 125	70 to 125	325 to 450	450 to 600

Note: If no value is given, no recommendation is available

* The current values are based on use of argon gas, these values may vary depending on the type of shielding gas, type of equipment and application.

Credit AWS A5.12M/A5.12:2009 (ISO 6848:2004) Table A.2



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