



XTR Pure Tungsten EWP (WP)

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:

Pure tungsten electrodes contain 99.50% tungsten, have the highest consumption rate of all electrodes. These electrodes form a clean, "balled" tip when heated and provide great arc stability for AC welding with a balanced wave. Pure tungsten also provides good arc stability for AC sine wave welding, especially on aluminum and magnesium. It is not typically used for DC welding because it does not provide the strong arc starts associated with thoriated or ceriated electrodes.

Standards, Specifications, Typical Analysis:

| | | | |
|-------------------------------|-------------------------------|------------------------------------|----------------------|
| Classification | EWP – ANSI/AWS A5.12, ISO6848 | | |
| Principle Oxide, Mass Percent | None, | Impurities Mass Percent: 0.5% Max, | Tungsten (W) Balance |
| Color Code per AWS | Green #008000 | | |



| | 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 | | |
| .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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Ver. 9.27.2021