



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

ERTi-1,2,3,4 Welding Wire and Rod



 **American Welding Society**
Sustaining Company Member



ALLOY DESCRIPTION AND APPLICATION; Commercially Pure “CP”

Washington Alloy ERTi-1, -2, -3, -4 is all consider commercially pure. **Grade ERTi-1** is the lowest strength and used where ductility is paramount, such as explosive cladding, loose linings, expanded metal, and deep drawing applications. It is also used in electrolytic applications like coated anode substrates for production of chlorine and sodium chlorate. **Grade ERTi-2** is the "workhorse" of the industrial corrosion market and most common unalloyed grade. Grade 2 is generally the most readily available in all product forms and has the lowest cost. It is used for process equipment like pressure vessels, columns, tanks, heat exchangers, shafts, blowers and fans, condenser tubing, valves, fittings, and pipe. **Grade ERTi-3** is a higher strength unalloyed (or Commercially Pure--CP) grade. Grade 3 is used for process equipment, tubing and pipe. Grade 3 is not as readily available as CP-2, but should be considered in applications where its higher strength reduces metal thickness required, and where the quantity of metal justifies a mill purchase. **Grade ERTi-4** is the highest strength unalloyed (or Commercially Pure--CP) grade. Grade 4 is rarely used in corrosion service, but has been used (under AMS Specifications) in aircraft components where its higher strength can reduce the weight of components like bulkheads and firewalls.

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" | 100-185 | 9-12 | 1/2" | 20 | 1/16-1/8" |
| 3/32" | 3/32" | 150-250 | 11-15 | 5/8" | 25 | 1/8- 3/16" |
| 1/8" | 1/8" | 200-375 | 11-15 | 3-4" | 30 | 1/4-1/2" |

TYPICAL GMAW WELDING PROCEDURES; DCEP Short Circuit

| Wire Diameter | Wire Speed (ipm) | Amps | Volts | Ar & Ar+He (cfh) |
|---------------|------------------|---------|-------|------------------|
| 0.030 | 450-650 | 100-195 | 16-20 | 35-65 |
| 0.035 | 480-420 | 165-285 | 18-27 | 35-65 |
| 0.045 | 500-880 | 250-360 | 31-35 | 35-65 |

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

WIRE CHEMISTRY (%) & WELD METAL Requirements

| | ERTi-1 | ERTi-2 | ERTi-3 | ERTi-4 |
|----------------------------------|-----------|-----------|-----------|-----------|
| Carbon | 0.03 max | 0.03 max | 0.03 max | 0.03 max |
| Oxygen | 0.03-0.10 | 0.08-0.16 | 0.13-0.20 | 0.18-0.32 |
| Nitrogen | 0.012 max | 0.015 max | 0.02 max | 0.025 max |
| Hydrogen | 0.005 max | 0.008 max | 0.008 max | 0.008 max |
| Iron | 0.08 max | 0.12 max | 0.16 max | 0.25 max |
| Tensile Strength (psi) | 35,000 | 50,000 | 65,000 | 80,000 |
| Yield Strength (psi) | 20,000 | 40,000 | 55,000 | 70,000 |
| SPECIFICATIONS; AWS A5.16 | ERTi-1 | ERTi-2 | ERTi-3 | ERTi-4 |

AVAILABLE SIZES: TU ERTi = Spools of .030, .035, .045, 1/16

Cut lengths of .030, .035, .045, 1/16, 3/32, 1/8, 5/32, 3/16, 1/4

Other sizes available – please inquire



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