

UA-80 WELD TEST SPECIFICATION

"TIP-TIG" Semi-Automatic GTAW Welding Process

MAXIMUM TIME PERMITTED FOR TEST IS 3 HOURS

PIPE COUPON MATERIAL

- Specification of Base Metal(s): SA 106
- Pipe Size: NPS 6, Sch. 80 Thickness: 0.432" Wall

JOINT CONFIGURATION

- Single Vee Groove without backing or retainers
- Bevel: 35 deg. \pm 5 deg. Land: 0 to $\frac{1}{8}$ "
- Root Gap: $\frac{1}{16}$ " to $\frac{1}{8}$ "
- Misalignment: $\frac{1}{16}$ " maximum

TEST POSITION

- 6G fixed position, coupon position maintained without rotation or change in height
- Uphill progression required on vertical portions of weld joint

WELDING CONDITIONS

- Requires the use of the "Tip-Tig" Hot Wire Power Source
- ER 70S-6 .035" Diameter
- Amperage Range: 115 to 220
- Wire Feed Speed (IPM): 60 to 160
- Direct Current & Electrode Negative
- Tungsten: EWTh-2 or EWCe-2, $\frac{3}{32}$ " or $\frac{1}{8}$ " Diameter
- Cup Size: #4 through #12
- Shielding Gas: Argon @ 8 to 35 CFH
- Backing Gas: None
- Trailing Gas: None

GENERAL WELDING TECHNIQUES

- Minimum Preheat of 50° F is required.
- Back gouging of welds is not permitted.
- I.D. Root Penetration: flush to $\frac{1}{8}$ " maximum
- O.D. Reinforcement: flush to $\frac{1}{8}$ " maximum
- Stringer beads required for root pass, subsequent passes may be stringer or weave beads
- Initial & interpass cleaning with brushing & grinding using hand or power tools
- The cover pass must be left in the "as welded" condition, clean with wire brush, (grinding on the completed test coupon is not allowed)

INSPECTION AND TESTING

- The completed test assembly shall be visually examined over the entire circumference, inside and outside, showing complete joint penetration with complete fusion of weld metal and base metal (no concavity); and shall be uniform and free of cracks, incomplete fusion, incomplete penetration, porosity, slag, and undercut (not to exceed $\frac{1}{32}$ ")
- Test coupon shall be examined by radiography in accordance with ASME Code Section IX