

UA-63 WELD TEST SPECIFICATION

Manual GTAW/SMAW Welding Processes

MAXIMUM TIME PERMITTED FOR TEST IS 5 HOURS

PIPE COUPON MATERIAL

- Specification of Base Metal(s): SA 106
- Pipe Size: 2.750" O. D. Thickness: 0.625" 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

ROOT

- ER 70S-2 $\frac{3}{32}$ " or $\frac{1}{8}$ " Diameter
- Deposit 0.125" of ER 70S-2
- Amperage Range: $\frac{3}{32}$ " 65 to 95; $\frac{1}{8}$ " 75 to 125
- Direct Current & Electrode Negative
- Pulsing current not permitted.
- 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 or Trailing Gas is not permitted

BALANCE

- E 7018 $\frac{3}{32}$ ", $\frac{1}{8}$ " or $\frac{5}{32}$ " Diameter
- Amperage Range: $\frac{3}{32}$ " 70 to 100 ; $\frac{1}{8}$ " 115 to 165; $\frac{5}{32}$ " 150 to 220
- Direct Current & Electrode Positive
- Deposit a minimum of three layers

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 $\frac{3}{16}$ " 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 or filing 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