

CONSTRUCTION: JOINING OF PIPES BY WELDING

Issued: 11-16-10 Revised: _____ Number: 7B2 Page: _____

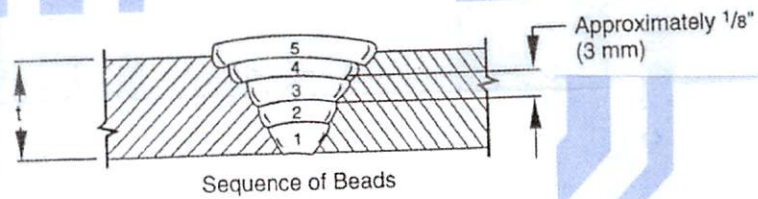
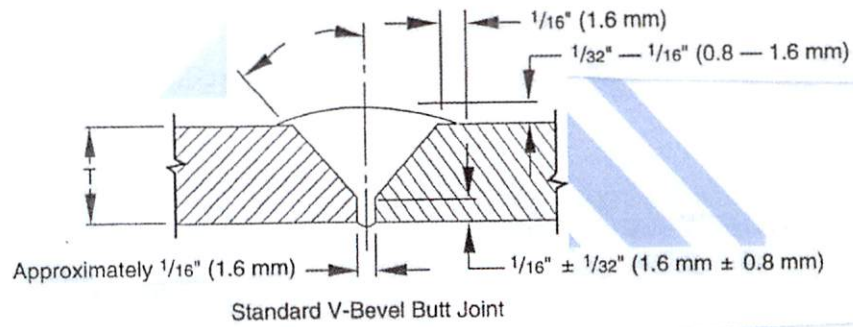
STANDARD WELDING PROCEDURE SPECIFICATION # 7B2

- A. Process: Manual Electric Arc
- B. Material: API-5L Grade A thru X42
- C. Diameter and Wall Thickness: 2 3/8 THRU 6 5/8 and .188 WT THRU .500 WT
- D. Joint Design: Standard Vee Groove 30 degrees
- E. Filler Metal and Number of Beads: Electrode Classification
Electrode E6010 And E8010 AWS Class A5.1-A5.5 Minimum of 3 Passes
- F. Electrical or Flame Characteristics: D.C. Reverse Polarity, Electrode Positive
- G. Position: Inclined 45 degrees
- H. Direction of Welding: Vertical Down
- I. Number of Welders: 1
- J. Time Lapse Between Passes: Maximum of 5 minutes between stringer and hot pass;
3 minutes maximum when temperature is below 35° F.
- K. Type of Line-Up Clamp: External
- L. Removal of Line-Up Clamp: After 50% completion of stringer bead
- M. Cleaning: Taper grind starts and craters and flatten crown by grinding stringer bead,
power buff all remaining passes.
- N. Speed of Travel: String bead 10 inches per minute maximum.
- O. *Preheat, Stress Relief: Maximum of 300°F. Minimum of 150°F. Preheating shall
be done with device or equipment which will heat entire circumference(s) in single
application 2" back from pipe ends.
- P. Notes: Welded pipe strings shall be temporarily capped to prevent air draft cooling
of stringer beads. Weld shall be completely protected from moisture until it has
cooled to ambient temperature. Weld zone shall be protected so that the wind
velocity near it does not exceed 8 miles per hour.

*X-Rated pipe must be stress relief if the carbon content exceeds 32% or C+1/4 Mn exceeds 65%. Heating of X-Rated pipe is limited to 600°F.

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Note: Dimensions are for example only.

| Bead No. | Electrode Diameter | Amperage Range | Voltage Range | Type Rod | Notes |
|----------|--------------------|----------------|---------------|-----------|-------|
| 1 | 1/8 | 90-120 | 22-30 | E6010 5P+ | 50 |
| 2 | 1/8 | 85-110 | 27-35 | E8010 70+ | 60 |
| 3 | 5/32 | 85-115 | 22-32 | E8010 70+ | 60 |
| 4 | * | | | | |
| 5 | | | | | |

| Bead No. | Notes |
|----------|--|
| | Electrodes may be substituted within Rod group AWS A5.1–A5.5 |
| 4 | * If a fourth pass is needed – same voltage and amperage as #3 |
| | |
| | |
| | |
| | |

WELD TEST REPORT

(USE SEPARATE FORM FOR EACH WELDING PROCEDURE)

| | | | | | | | |
|---|--|---|--|--|--|-------------------------------------|------------------------------------|
| DATE 11-15-10 | | WELDER'S NAME Timmy Light | | | SOCIAL SECURITY NUMBER 1323 | | |
| LOCATION Dalhousie | | NAME OF CONTRACTOR OR COMPANY Bennett Bros | | RIGHT HANDED <input checked="" type="checkbox"/> | REQUALIFYING TEST <input type="checkbox"/> | | |
| POSITION INCLINED <input checked="" type="checkbox"/> FIXED <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/> | | ELECTRIC ARC <input checked="" type="checkbox"/> INDOORS <input checked="" type="checkbox"/> OX-ACETYLENE <input type="checkbox"/> OUTDOORS <input type="checkbox"/> | | WEATHER C1 | TEMPERATURE 60 | TIME OF DAY AM | WIND BREAK USED Indoor 5 |
| PIPE SPECIFICATION API-5L GR42 | | PIPE MANUFACTURER Brunson Mannesmann | | WALL THICKNESS 1.88 | | DIAMETER (OD) 6 5/8 | WEIGHT PER FOOT 12.92 |
| MAKE OF WELDING MACHINE Lin. | | SIZE 200 | MAKE OF OX-ACETYLENE APPARATUS N/A | WELDING NOZZLE SIZE N/A | | QUALIFYING TEST FOR | |
| BRAND OF ELECTRODE Lin. | | BRAND OF OX-ACETYLENE ROD AND SIZE N/A | | NUMBER OF PASSES - OX-ACETYLENE WELD N/A | | WELDING PROCEDURE NO. 7B2 | |

| PIPE WELD | ELECTRODE TYPE AND SIZE | MACHINE SETTINGS | | AMPERAGE RG. | VOLTAGE RG. |
|-----------|-------------------------------------|------------------|-----------|---------------|--------------|
| | | COARSE | FINE | | |
| 1 | STRINGER 1/8 5P+ Lin. | 130-190 | 40 | 90-120 | 22-30 |
| 2 | HOT PASS 1/8 70+ Lin. | 120-190 | 50 | 85-110 | 27-35 |
| 3 | FILLER (S) 5/32 70+ Lin. | 120-190 | 50 | 85-115 | 22-32 |
| 4 | CAP PASS if Needed Same as 3 | — | — | — | — |

| TENSILE TESTS | COUPON | | | CROSS SEC. AREA SQ. IN. | LOAD | % ELONG. | COMPUTED TENSIL PSI | REMARKS | AC-CEPTED | RE-JECTED |
|---------------|-----------|-----------|-------|-------------------------|------|----------|---------------------|------------|-----------|-----------|
| | LOCATION | LENGTH | WIDTH | | | | | | | |
| 1 | T3 | 8" | | | | | 67,716 | LAB | | |
| 2 | B3 | 8" | | | | | 69,531 | LAB | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |

| BEND TESTS | COUPON LOCATION | TYPE OF BEND | REMARKS | AC-CEPTED | RE-JECTED |
|------------|-----------------|--------------|---|-------------------------------------|-------------------------------------|
| | 1 | T1 | Root | No defect | <input checked="" type="checkbox"/> |
| 2 | T2 | Face | No defect | <input checked="" type="checkbox"/> | |
| 3 | B1 | Root | Small opening on edge by Root edge | <input checked="" type="checkbox"/> | |
| 4 | B2 | Face | No defect | <input checked="" type="checkbox"/> | |

| NICK-BREAK TESTS | COUPON LOCATION | REMARKS | AC-CEPTED | RE-JECTED |
|------------------|-----------------|------------------------------|-------------------------------------|-------------------------------------|
| | | - Root #3 | No Defect | <input checked="" type="checkbox"/> |
| 1 | T4 | Clear Metal No defect | <input checked="" type="checkbox"/> | |
| 2 | B4 | Clear Metal No defect | <input checked="" type="checkbox"/> | |
| 3 | | | | |
| 4 | | | | |

| | | | | | |
|---|--|---------------------------|-------------------|--|--------------------|
| SIZE AND WALL THICKNESS OF MAIN | | GAS PRESSURE ON MAIN PSIG | | LOCATION OF FRACTURE WELD <input type="checkbox"/> NIPPLE <input type="checkbox"/> MAIN <input type="checkbox"/> | |
| DID WELD CONTAIN: PINHOLES COLDROLL UNDERCUT | | | DEPTH OF UNDERCUT | | LENGTH OF UNDERCUT |
| REMARKS ON TEE WELD | | | | | |

| | | | | | |
|-----------|---|---|-----------------------------------|--|--|
| PIPE WELD | QUALIFIED <input checked="" type="checkbox"/> NOT QUALIFIED <input type="checkbox"/> | ELECTRIC ARC <input checked="" type="checkbox"/> OX-ACETYLENE <input type="checkbox"/> | TEE WELD | QUALIFIED <input type="checkbox"/> NOT QUALIFIED <input type="checkbox"/> | ELECTRIC ARC <input type="checkbox"/> OX-ACETYLENE <input type="checkbox"/> |
| TESTED BY | SIGNATURE <i>Kevin ...</i> | | TITLE <i>Root Mes. - Insp.</i> | | |