

# CONSTRUCTION: JOINING OF PIPES BY WELDING

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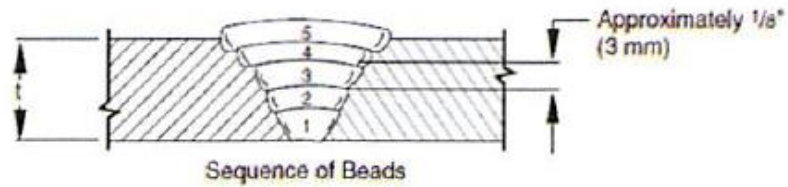
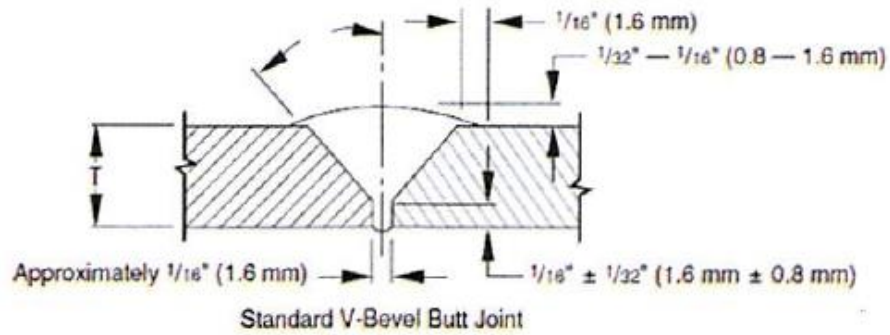
Issued: 8-14-2007 Revised: \_\_\_\_\_ Number: 7AH Page: \_\_\_\_\_

## STANDARD WELDING PROCEDURE SPECIFICATION #: 7AH

- 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 less than 0.188 WT
  - D. Joint Design: Standard Vee Groove 30 degrees
  - E. Filler Metal and Number of Beads: Electrode Classification Electrode E6010 AWS Class A5.1 Minimum of 3 Passes
  - F. Electrical or Flame Characteristics: D.C. Reverse Polarity, Electrode Positive
  - G. Position: Fixed horizontal
  - 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 N/A
  - 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 8mph.
- \* 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	3/32	65-80	20-25	E6010 5P+	
2	1/8**	80-100	25-35	E6010 5P+	
3	1/8	80-100	25-35	E6010 5P+	
4	1/8	80-105	27-37	E6010 5P+	
5					

Bead No.	Notes
2	Can be ran with 3/32 rod in the same class range at 75-85 amps and 22-27 volts

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## WELD TEST REPORT

(USE SEPARATE FORM FOR EACH WELDING PROCEDURE)

DATE <i>1-16-08</i>		WELDER'S NAME <i>Jimmie Moore</i>		SOCIAL SECURITY NUMBER <i>1536</i>	
LOCATION <i>Garwood</i>		NAME OF CONTRACTOR OR COMPANY <i>West Texas Gas</i>		RIGHT HANDED <input checked="" type="checkbox"/> LEFT HANDED <input type="checkbox"/>	
POSITION <input type="checkbox"/> INCLINED <input checked="" type="checkbox"/> FIXED <input checked="" type="checkbox"/> HORIZONTAL		ELECTRIC ARC <input checked="" type="checkbox"/> INDOORS <input checked="" type="checkbox"/> OX-ACETYLENE <input type="checkbox"/> OUTDOORS		WEATHER <i>CL</i> TEMPERATURE <i>-</i>	
PIPE SPECIFICATION <i>API-5L GR X42</i>		PIPE MANUFACTURER <i>Republic</i>		WALL THICKNESS <i>0.156</i>	
MAKE OF WELDING MACHINE <i>Lin.</i>		SIZE <i>300</i>		DIAMETER (OD) <i>6.75</i>	
BRAND OF ELECTRODE <i>Lin.</i>		BRAND OF OX-ACETYLENE ROD AND SIZE <i>-</i>		WELDING NOZZLE SIZE <i>-</i>	
				OX-ACETYLENE PRESSURE FLOWING <i>QUALIFIED TEST FOR</i>	
				NUMBER OF PASSES - OX-ACETYLENE WELD <i>-</i>	
				WELDING PROCEDURE NO. <i>T-AH</i>	

	ELECTRODE TYPE AND SIZE	MACHINE SETTINGS		AMPERAGE RG.	VOLTAGE RG.
		COARSE	FINE		
PIPE WELD	STRINGER <i>Lin 7/32 5PT</i>	<i>120-190</i>	<i>30</i>	<i>65-80</i>	<i>20-25</i>
	HOT PASS <i>Lin 1/8 5PT</i>	<i>120-190</i>	<i>40</i>	<i>80-100</i>	<i>25-35</i>
	FILLER (S) <i>Lin 1/8 5PT</i>	<i>120-190</i>	<i>40</i>	<i>80-100</i>	<i>25-35</i>
	CAP PASS <i>Lin 1/8 5PT</i>	<i>120-190</i>	<i>40</i>	<i>80-105</i>	<i>27-37</i>

	COUPON			CROSS SEC. AREA SQ. IN.	LOAD	% ELONG.	COMPUTED TENSILE PSI	REMARKS	AC-CEPTED	RE-JECTED
	LOCATION	LENGTH	WIDTH							
TENSILE TESTS	1	<i>T1</i>	<i>8" x 1"</i>	<i>.160</i>	<i>19,000</i>	<i>20%</i>	<i>62,500</i>	<i>No defect</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	2	<i>T2</i>	<i>8" x 1"</i>	<i>.160</i>	<i>19,000</i>	<i>15%</i>	<i>62,500</i>	<i>No defect</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	3									
	4									

	COUPON LOCATION	TYPE OF BEND	REMARKS	AC-CEPTED	RE-JECTED
	BEND TESTS	1	<i>R1</i>	<i>Root</i>	<i>No defect</i>
	2	<i>R2</i>	<i>Root</i>	<i>" "</i>	<input checked="" type="checkbox"/>
	3	<i>F1</i>	<i>Face</i>	<i>" "</i>	<input checked="" type="checkbox"/>
	4	<i>F2</i>	<i>Face</i>	<i>Opening on side - Clean</i>	<input checked="" type="checkbox"/>

	COUPON LOCATION	REMARKS	AC-CEPTED	RE-JECTED
	NICK-BREAK TESTS	1	<i>N1</i>	<i>Clear Gray Metal</i>
	2	<i>N2</i>	<i>Clear Gray Metal</i>	<input checked="" type="checkbox"/>
	3			
	4			

This weld has been visually and destructively tested in accordance with API-1103

TEE WELD TEST	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 <input type="checkbox"/> COLDROLL <input type="checkbox"/> UNDERCUT <input type="checkbox"/>		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>Jimmie Moore</i>		TITLE	<i>Welder</i>	