

# CONSTRUCTION: JOINING OF PIPES BY WELDING

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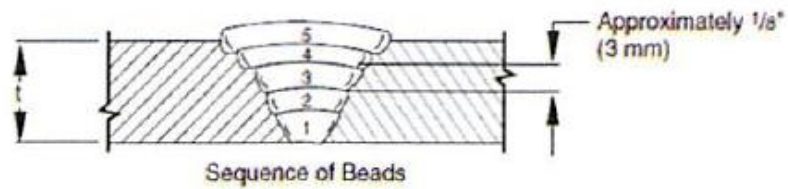
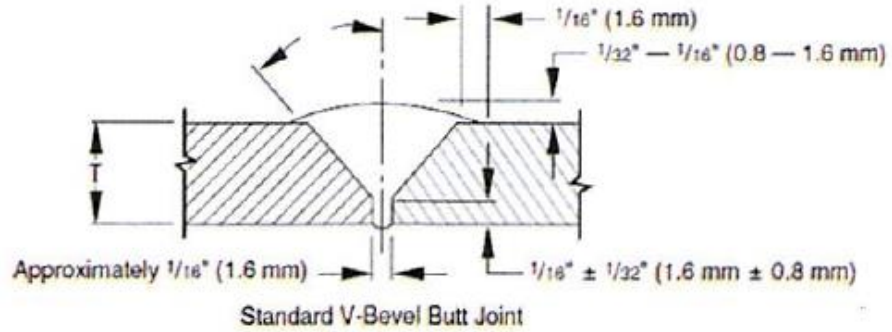
Issued: 2-18-2008 Revised: \_\_\_\_\_ Number: 4AH Page: \_\_\_\_\_

## STANDARD WELDING PROCEDURE SPECIFICATION #: 4AH

- A. Process: Manual Electric Arc
- B. Material: API-5L Grade A thru X42
- C. Diameter and Wall Thickness: Less than 2 3/8 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: 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 30% 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	55-70	32-42	E6010 5P+	
2	3/32	55-66	40-45	E6010 5P+	
3	1/8	65-82	40-46	E6010 5P+	
4	1/8	60-90	35-48	E6010 5P+	
5					

Bead No.	Notes
	Electrodes may be substituted within Rod group 1&2 of AWS A5.1 - A5.5

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## WELD TEST REPORT

(USE SEPARATE FORM FOR EACH WELDING PROCEDURE)

DATE <i>1-18-08</i>		WELDER'S NAME <i>Timmie Moore</i>		SOCIAL SECURITY NUMBER <i>XXX-XX-1536</i>	
LOCATION <i>Sumner</i>		NAME OF CONTRACTOR OR COMPANY <i>West Texas Gas</i>		RIGHT HANDED <input checked="" type="checkbox"/> LEFT HANDED <input type="checkbox"/>	
POSITION INCLINED <input type="checkbox"/> FIXED <input checked="" type="checkbox"/> HORIZONTAL <input checked="" type="checkbox"/>		ELECTRIC ARC <input checked="" type="checkbox"/> INDOORS <input checked="" type="checkbox"/> OX-ACETYLENE <input type="checkbox"/> OUTDOORS <input type="checkbox"/>		WEATHER <i>CL</i> TEMPERATURE <i>60</i>	
PIPE SPECIFICATION <i>API-5L SP X42</i>		PIPE MANUFACTURER <i>Rcp</i>		WALL THICKNESS <i>.145</i>	
MAKE OF WELDING MACHINE <i>LIN</i>		SIZE <i>200</i>		MAKE OF OX-ACETYLENE APPARATUS <i>N/A</i>	
BRAND OF ELECTRODE <i>LIN</i>		BRAND OF OX-ACETYLENE ROD AND SIZE <i>N/A</i>		WELDING NOZZLE SIZE <i>N/A</i>	
				OX-ACETYLENE PRESSURE FLOWING <i>N/A</i>	
				NUMBER OF PASSES - OX-ACETYLENE WELD <i>N/A</i>	
				WELDING PROCEDURE NO. <i>4-AH</i>	

PIPE WELD	ELECTRODE TYPE AND SIZE		MACHINE SETTINGS		AMPERAGE RG.	VOLTAGE RG.
			COARSE	FINE		
STRINGER	<i>3/32 SP +</i>		<i>130-PO</i>	<i>40</i>	<i>50</i>	<i>34-42</i>
HOT PASS	<i>3/32 SP +</i>		<i>130-PO</i>	<i>45</i>	<i>55-66</i>	<i>40-45</i>
FILLER (S)	<i>1/8 SP +</i>		<i>130-PO</i>	<i>50</i>	<i>65-82</i>	<i>40-46</i>
CAP PASS	<i>1/8 SP +</i>		<i>130-PO</i>	<i>50</i>	<i>60-90</i>	<i>35-48</i>

TENSILE TESTS	COUPON			CROSS SEC. AREA SQ. IN.	LOAD	%ELONG.	COMPUTED TENSIL PSI	REMARKS	AC-CEPTED	RE-JECTED
	LOCATION	LENGTH	WIDTH							
1										
2										
3										
4										

BEND TESTS	COUPON LOCATION	TYPE OF BEND	REMARKS	AC-CEPTED	RE-JECTED
	1	<i>T1</i>	<i>Root</i>	<i>No defect</i>	<input checked="" type="checkbox"/>
2	<i>B1</i>	<i>Root</i>	<i>No defect</i>	<input checked="" type="checkbox"/>	
3					
4					

NICK-BREAK TESTS	COUPON LOCATION	REMARKS	AC-CEPTED	RE-JECTED
	1	<i>T2</i>	<i>Cham Gray Metal</i>	<input checked="" type="checkbox"/>
2	<i>B2</i>	<i>" " "</i>	<input checked="" type="checkbox"/>	
3				
4				

SIZE AND WALL THICKNESS OF MAIN	GAS PRESSURE ON MAIN PSI	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 checked="" type="checkbox"/> NOT QUALIFIED <input type="checkbox"/>	ELECTRIC ARC <input checked="" type="checkbox"/> OX-ACETYLENE <input type="checkbox"/>
TESTED BY	SIGNATURE <i>Donald Campbell</i>		TITLE	<i>Dist. Insp.</i>	

West Texas Gas Utility, LLC

Revised