

# CONSTRUCTION: JOINING OF PIPES BY WELDING

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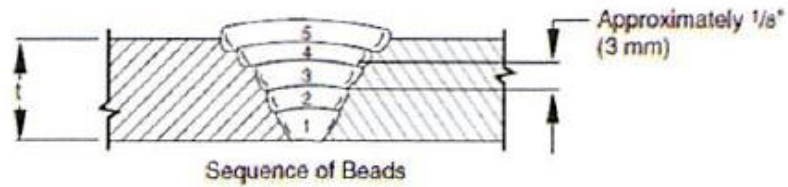
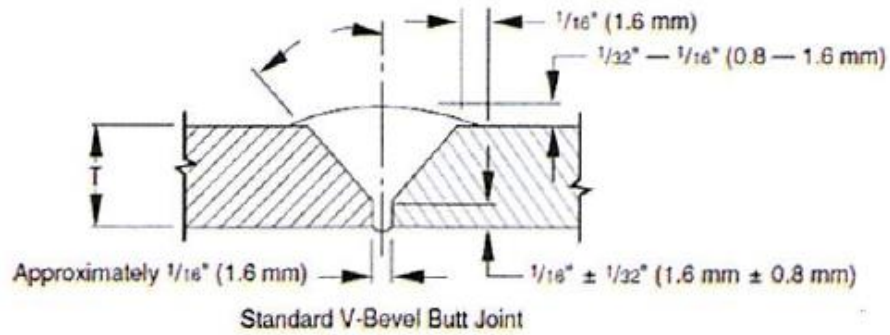
Issued: 1-31-2008 Revised: 12-13-2022 Number: 7BH Page: \_\_\_\_\_

## STANDARD WELDING PROCEDURE SPECIFICATION #: 7BH

- A. Process: Manual Electric Arc
- B. Material: API-5L Grade A25 thru X42
- C. Diameter and Wall Thickness: 2 3/8 thru 6 5/8 and less than 0.188 WT thru 0.500 WT
- D. Joint Design: Standard Vee Groove 30 degrees
- E. Filler Metal and Number of Beads: Electrode Classification Electrode E6010 & E8010  
AWS Class A5.1 Minimum of 3 Passes
- F. Electrical or Flame Characteristics: D.C. Reverse Polarity, Electrode Positive
- G. Position: 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 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 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*	1/8	95-110	20-30	E6010 5P+	
2	1/8	105-115	25-38	E8010	
3	1/8	105-120	25-40	E8010	
4	5/32	105-135	20-38	E8010	If needed
5					

Bead No.	Notes
	Electrodes may be substituted within rod group 1&2 of AWS A5.1-A5.5
1	* Stringer bead on 0.188 may be made with 3/32 E6010 5P+ at 60-90 amps and 20-30 volt range

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## WELD TEST REPORT

(USE SEPARATE FORM FOR EACH WELDING PROCEDURE)

DATE <i>1-31-08</i>		WELDER'S NAME <i>Timmie Moore</i>		SOCIAL SECURITY NUMBER <i>1536</i>	
LOCATION <i>Guywood</i>		NAME OF CONTRACTOR OR COMPANY <i>West Texas Gas</i>		RIGHT HANDED <input checked="" type="checkbox"/>	REQUALIFYING TEST <input checked="" type="checkbox"/>
POSITION <input checked="" type="checkbox"/> HORIZONTAL		ELECTRIC ARC <input checked="" type="checkbox"/> INDOORS <input checked="" type="checkbox"/>		LEFT HANDED <input type="checkbox"/>	QUALIFYING TEST <input type="checkbox"/> LINE TEST <input type="checkbox"/>
PIPE SPECIFICATION <i>API 5L-GR 102</i>		PPE MANUFACTURER <i>Republic</i>		WEATHER	TEMPERATURE
MAKE OF WELDING MACHINE <i>Lid.</i>		WELDING NOZZLE SIZE		TIME OF DAY	
BRAND OF ELECTRODE <i>Lid.</i>		BRAND OF OX-ACETYLENE ROD AND SIZE		WIND BREAK USED	
		NUMBER OF PASSES - OX-ACETYLENE WELD		WELDING PROCEDURE NO.	
				<b>QUALIFYING TEST FOR</b>	
				<b>7-BH</b>	

	ELECTRODE TYPE AND SIZE	MACHINE SETTINGS		AMPERAGE RG.	VOLTAGE RG.
		COARSE	FINE		
PIPE WELD	STRINGER <i>1/8 Lin 5PT</i>	<i>120-190</i>	<i>40</i>	<i>95-110</i>	<i>20-30</i>
	HOT PASS <i>1/8 Lin 70T</i>	<i>120-190</i>	<i>50</i>	<i>105-115</i>	<i>24-40</i>
	FILLER(S) <i>1/8 Lin 70T</i>	<i>120-190</i>	<i>55</i>	<i>105-120</i>	<i>25-40</i>
	CAP PASS <i>1/8 Lin 70T</i>	<i>120-190</i>	<i>60</i>	<i>105-135</i>	<i>25-35</i>

	COUPON			CROSS SEC. AREA SQ. IN.	LOAD	% ELONG.	COMPUTED TENSIL PSI	REMARKS	AC-CEPTED	RE-JECTED
	LOCATION	LENGTH	WIDTH							
TENSILE TESTS	<i>1</i>	<i>T1</i>	<i>8" x 1"</i>	<i>.280</i>	<i>17,500</i>	<i>20%</i>	<i>60,714</i>	<i>No defect</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<i>2</i>	<i>B1</i>	<i>8" x 1"</i>	<i>.280</i>	<i>17,500</i>	<i>20%</i>	<i>60,714</i>	<i>No defect</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<i>3</i>									
	<i>4</i>									

The weld has been visually inspected in accordance with 60.1104.

	COUPON LOCATION	TYPE OF BEND	REMARKS	AC-CEPTED	RE-JECTED	
						BEND TESTS
	<i>2</i>	<i>R2</i>	<i>Root</i>	<i>Small 1/32 opening @</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<i>3</i>	<i>F1</i>	<i>Face</i>	<i>No defect</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<i>4</i>	<i>F2</i>	<i>Face</i>	<i>No defect</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

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>Donald Langford</i>		TITLE	SIGNATURE <i>Timmie Moore</i>	