

CONSTRUCTION: JOINING OF PIPES BY WELDING

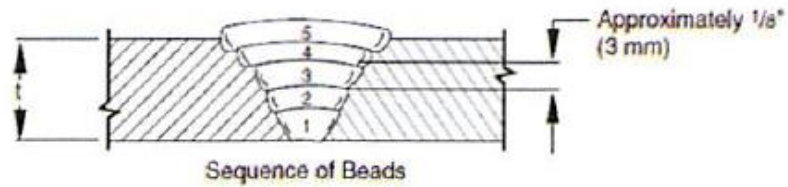
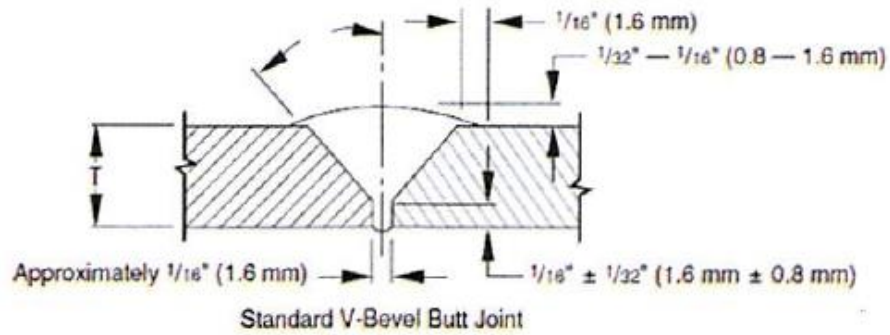
Issued: 1-06-2012 Revised: 12-13-2022 Number: 7B52 Page: _____

STANDARD WELDING PROCEDURE SPECIFICATION #: 7B52

- A. Process: Manual Electric Arc
- B. Material: API-5L Grade A thru X52
- 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-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 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*	90-120	22-30	E6010 5P+	
2	1/8	85-110	27-35	E8010	
3	5/32	85-115	22-32	E8010	
4	*				
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 WT may be made with 3/32 E-6010 5P+ at 60-90 amps and 20-30 volt range
4	* If a fourth pass is needed same settings as pass three may be used

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WELD TEST REPORT (USE SEPARATE FORM FOR EACH WELDING PROCEDURE)

DATE <i>1-6-12</i>		WELDER'S NAME <i>Danell Lawstam</i>		SOCIAL SECURITY NUMBER <i>XXXX 2519</i>	
LOCATION <i>Dallas TX</i>		NAME OF CONTRACTOR OR COMPANY <i>WTD</i>		REQUALIFYING TEST <input type="checkbox"/> QUALIFYING TEST <input checked="" type="checkbox"/> LINE TEST <input type="checkbox"/>	
POSITION INCLUDED <input checked="" type="checkbox"/> FIXED <input checked="" type="checkbox"/> HORIZONTAL <i>45°</i>		ELECTRIC ARC <input checked="" type="checkbox"/> INDOORS <input type="checkbox"/> OUTDOORS <input type="checkbox"/>		WEATHER <i>CL</i> TEMPERATURE <i>40</i> TIME OF DAY <i>Mid</i> WIND BREAK USED <i>N/A</i>	
PIPE SPECIFICATION <i>API 5L X 52</i>		PIPE MANUFACTURER <i>Eq</i>		WALL THICKNESS <i>0.250</i> DIAMETER (OD) <i>13.5</i> WEIGHT PER FOOT <i>17.02</i>	
MAKE OF WELDING MACHINE <i>Lin</i>		SIZE <i>300</i> MAKE OF OX-ACETYLENE APPARATUS <i>N/A</i>		WELDING NOZZLE SIZE <i>N/A</i> QUALIFYING TEST FOR	
BRAND OF ELECTRODE <i>Lin</i>		BRAND OF OX-ACETYLENE ROD AND SIZE <i>N/A</i>		NUMBER OF PASSES - OX-ACETYLENE WELD <i>N/A</i> WELDING PROCEDURE NO. <i>7B52</i>	

	ELECTRODE TYPE AND SIZE	MACHINE SETTINGS		AMPERAGE RG.	VOLTAGE RG.	
		COARSE	FINE			
PIPE WELD	STRINGER <i>Lin 5P+ 1/8</i>	<i>120-100</i>	<i>40</i>	<i>90-120</i>	<i>22-30</i>	Visual API 1104 Good
	HOT PASS <i>Lin 70+ 1/8</i>	<i>120-100</i>	<i>55</i>	<i>85-110</i>	<i>27-35</i>	
	FILLER (S) <i>Lin 70+ 5/32</i>	<i>120-100</i>	<i>60</i>	<i>85-115</i>	<i>22-32</i>	
	CAP PASS					

	COUPON			CROSS SEC. AREA SQ. IN.	LOAD	%ELONG.	COMPUTED TENSIL PSI	REMARKS	AC-CEPTED	RE-JECTED
	LOCATION	LENGTH	WIDTH							
TENSILE TESTS	1	<i>T1</i>	<i>8</i>	<i>1"</i>	<i>0.250</i>	<i>17,500</i>	<i>20%</i>	<i>70,000</i>	<i>No defects</i>	<input checked="" type="checkbox"/>
	2	<i>B1</i>	<i>8</i>	<i>1"</i>	<i>0.250</i>	<i>17,500</i>	<i>20%</i>	<i>70,000</i>	<i>No defects</i>	<input checked="" type="checkbox"/>
	3									
	4									

	COUPON LOCATION	TYPE OF BEND	REMARKS	AC-CEPTED	RE-JECTED
	BEND TESTS	1	<i>T1</i>	<i>Root</i>	<i>No cracks or defects</i>
2		<i>B1</i>	<i>FACE</i>	<i>" " " "</i>	<input checked="" type="checkbox"/>
3		<i>T2</i>	<i>Root</i>	<i>" " " "</i>	<input checked="" type="checkbox"/>
4		<i>B2</i>	<i>FACE</i>	<i>" " " "</i>	<input checked="" type="checkbox"/>

	COUPON LOCATION	REMARKS	AC-CEPTED	RE-JECTED
	NICK-BREAK TESTS	1	<i>T4 Clean Metal</i>	<input checked="" type="checkbox"/>
2		<i>B4 Clean Metal</i>	<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: POROSITIES <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>S.M. Mack...</i>		TITLE <i>Welding Inspector</i>		

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WELD TEST REPORT

(USE SEPARATE FORM FOR EACH WELDING PROCEDURE)

DATE <i>3-15-21</i>		WELDER'S NAME <i>Darrell Langford</i>			SOCIAL SECURITY NUMBER _____		
LOCATION <i>GUYMON</i>		NAME OF CONTRACTOR OR COMPANY <i>WTG</i>			RIGHT HANDED <input checked="" type="checkbox"/>	REQUALIFYING TEST <input type="checkbox"/>	LINE TEST <input type="checkbox"/>
POSITION <input type="checkbox"/> INCLINED <input checked="" type="checkbox"/> FIXED <input checked="" type="checkbox"/> HORIZONTAL <i>45°</i>	ELECTRIC ARC <input checked="" type="checkbox"/> INDOORS <input checked="" type="checkbox"/> OX-ACETYLENE <input type="checkbox"/> OUTDOORS <input type="checkbox"/>		WEATHER <i>—</i>	TEMPERATURE <i>70</i>	TIME OF DAY <i>Mid</i>	WIND BREAK USED <i>N/A</i>	
PIPE SPECIFICATION <i>API-5L X52</i>		PIPE MANUFACTURER <i>Tubeco</i>		WALL THICKNESS <i>.188</i>	DIAMETER (OD) <i>6 5/8</i>	WEIGHT PER FOOT	
MAKE OF WELDING MACHINE <i>Lin</i>		SIZE <i>250</i>	MAKE OF OX-ACETYLENE APPARATUS <i>N/A</i>	WELDING NOZZLE SIZE <i>N/A</i>	OX-ACETYLENE PRESSURE FLOWING <i>N/A</i>		
BRAND OF ELECTRODE <i>Lin</i>		BRAND OF OX-ACETYLENE ROD AND SIZE <i>N/A</i>		NUMBER OF PASSES - OX-ACETYLENE WELD <i>N/A</i>	WELDING PROCEDURE NO. <i>7 B52</i>		

PIPE WELD	ELECTRODE TYPE AND SIZE		MACHINE SETTINGS		AMPERAGE RG.	VOLTAGE RG.	REMARKS	AC-CEPTED	RE-JECTED
	COARSE	FINE							
STRINGER	<i>5A 5P+ 3/32</i>	<i>120-190</i>	<i>35</i>	<i>65-80</i>	<i>20-30</i>		This weld has been visually inspected and distributively tested in accordance to API-1104		
HOT PASS	<i>5A 70+ 1/8</i>	<i>55</i>	<i>85-110</i>	<i>27-35</i>					
FILLER (S)	<i>5A 70+ 1/8</i>	<i>60</i>	<i>85-115</i>	<i>22-32</i>					
CAP PASS	<i>5A 70+ 5/32</i>	<i>60</i>	<i>85-115</i>	<i>22-32</i>					

TENSILE TESTS	COUPON			CROSS. SEC. AREA SQ. IN.	LOAD	%ELONG.	COMPUTED TENSILE PSI	REMARKS	AC-CEPTED	RE-JECTED
	LOCATION	LENGTH	WIDTH							
1	<i>T1</i>	<i>9"</i>	<i>1"</i>	<i>.188</i>	<i>13000</i>	<i>25%</i>	<i>69,148</i>	<i>Teke in Punch</i>	<input checked="" type="checkbox"/>	
2	<i>T2</i>	<i>9"</i>	<i>1"</i>	<i>.188</i>	<i>13000</i>	<i>25%</i>	<i>69,148</i>	<i>5 5 5</i>	<input checked="" type="checkbox"/>	
3										
4										

BEND TESTS	COUPON LOCATION		TYPE OF BEND	REMARKS	AC-CEPTED	RE-JECTED
	1	2				
1	<i>P1</i>	<i>Root</i>	<i>No cracks or defects</i>		<input checked="" type="checkbox"/>	
2	<i>F1</i>	<i>face</i>	<i>" "</i>		<input checked="" type="checkbox"/>	
3	<i>P1</i>	<i>Root</i>	<i>" "</i>		<input checked="" type="checkbox"/>	
4	<i>F1</i>	<i>face</i>	<i>" "</i>		<input checked="" type="checkbox"/>	

NICK-BREAK TESTS	COUPON LOCATION		REMARKS	AC-CEPTED	RE-JECTED
	1	2			
1	<i>N1</i>	<i>Chau Gray Metal</i>	<i>No defects</i>	<input checked="" type="checkbox"/>	
2	<i>N2</i>	<i>" "</i>	<i>" "</i>	<input checked="" type="checkbox"/>	
3					
4					

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		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>[Signature]</i>		TITLE		