

CONSTRUCTION: JOINING OF PIPES BY WELDING

Issued: 8-14-2007 Revised: _____ Number: 6A Page: _____

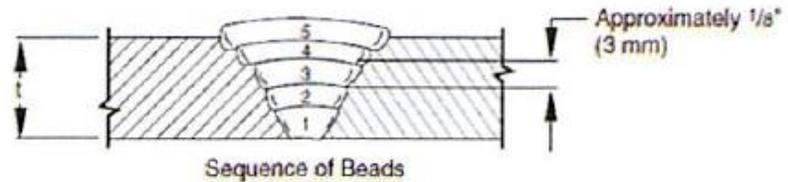
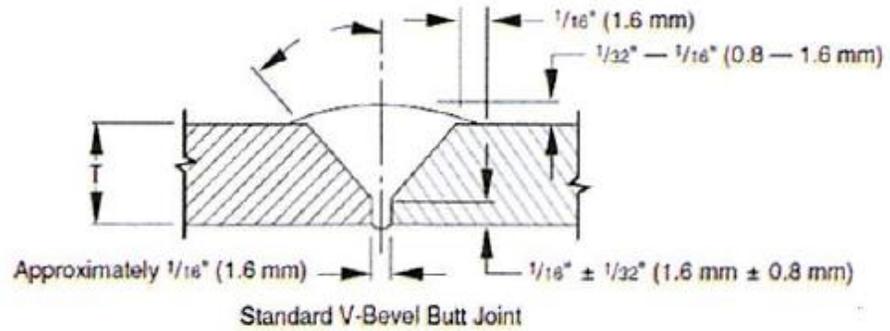
STANDARD WELDING PROCEDURE SPECIFICATION #: 6A

- A. Process: Manual Electric Arc
- B. Material: API 5L Grade X52 thru X60
- C. Diameter and Wall Thickness: Greater than 12" and .188 thru .500 wall thickness
- D. Joint Design: Standard Vee Groove, 30 Degree Bevel
- E. Filler Metal and Number of Beads: Electrode Classification:
Electrode E6010, AWS Class A5.1, Minimum of 4 Passes
- F. Electrical or Flame Characteristics: 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 to 12 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	5/32	110-130	22-30	E6010 5P+	
2	5/32	115-155	24-35	E6010 5P+	
3	5/32	115-155	24-32	E6010 5P+	
4	3/16	132-170	27-35	E6010 5P+	
5					

Bead No.	Notes
	If necessary, more passes may be made at bead #4 amperage and Voltage settings.

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

DATE <i>8-14-2007</i>		WELDER'S NAME <i>Darrell Lawford</i>		SOCIAL SECURITY NUMBER <i>009-82-2519</i>	
LOCATION <i>Coupon</i>		NAME OF CONTRACTOR OR COMPANY <i>West Texas Gas</i>		RIGHT HANDED <input type="checkbox"/> LEFT HANDED <input type="checkbox"/>	
POSITION INCLINED <input type="checkbox"/> HORIZONTAL <input checked="" type="checkbox"/> FIXED <input checked="" type="checkbox"/>		ELECTRIC ARC <input checked="" type="checkbox"/> INDOORS <input type="checkbox"/> OX-ACETYLENE <input type="checkbox"/> OUTDOORS <input type="checkbox"/>		WEATHER <i>OK</i> TEMPERATURE <i>100</i>	
PIPE SPECIFICATION <i>API 5L GR X 60</i>		PIPE MANUFACTURER <i>Republic</i>		WALL THICKNESS <i>.281</i>	
MAKE OF WELDING MACHINE <i>Lin</i>		SIZE <i>300</i>		DIAMETER (OD) <i>20"</i>	
BRAND OF ELECTRODE <i>Lin</i>		MAKE OF OX-ACETYLENE APPARATUS <i>N/A</i>		WELDING NOZZLE SIZE <i>N/A</i>	
		BRAND OF OX-ACETYLENE ROD AND SIZE <i>Lin</i>		NUMBER OF PASSES - OX-ACETYLENE WELD <i>N/A</i>	
				WELDING PROCEDURE NO. <i>#6-A</i>	

PIPE WELD	ELECTRODE TYPE AND SIZE		MACHINE SETTINGS		AMPERAGE RG.	VOLTAGE RG.	
			COARSE	FINE			
STRINGER	<i>Lin 5/32</i>	<i>5PT</i>	<i>120-170</i>	<i>55</i>	<i>110-130</i>	<i>22-30</i>	<i>Tanked under APF now qualified 20th Edition</i>
HOT PASS	<i>Lin 5/32</i>	<i>5PT</i>	<i>160-240</i>	<i>65</i>	<i>115-155</i>	<i>22-35</i>	
FILLER (S)	<i>Lin 5/32</i>	<i>5PT</i>	<i>160-240</i>	<i>65</i>	<i>115-155</i>	<i>24-32</i>	
CAP PASS	<i>Lin 3/16</i>	<i>5PT</i>	<i>160-240</i>	<i>75</i>	<i>132-170</i>	<i>27-35</i>	

TENSILE TESTS	COUPON		CROSS SEC. AREA SQ. IN.	LOAD	% ELONG.	COMPUTED TENSIL PSI	REMARKS	AC. CEPTED	RE. JECTED
	LOCATION	LENGTH							
1	<i>TR1</i>	<i>8"</i>	<i>1"</i>	<i>.290</i>	<i>29000</i>	<i>20%</i>	<i>68,965 Broke in Punch bk.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	<i>TL1</i>						<i>Same</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	<i>BR 2</i>						<i>Same</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	<i>BL 2</i>						<i>Same</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

BEND TESTS	COUPON LOCATION	TYPE OF BEND	REMARKS	AC. CEPTED	RE. JECTED
	1	<i>R1</i>	<i>Root</i>	<i>No Cracks No defects</i>	<input checked="" type="checkbox"/>
2	<i>R2</i>	<i>Root</i>	<i>" "</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	<i>R3</i>	<i>Root</i>	<i>" "</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	<i>R4</i>	<i>Root FACE</i>	<i>" "</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	<i>F1</i>	<i>Root FACE</i>	<i>" "</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	<i>F2</i>	<i>Root FACE</i>	<i>Opening on Side - Clean Gas</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	<i>F3</i>	<i>Root FACE</i>	<i>" "</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	<i>F4</i>	<i>Root FACE</i>	<i>" "</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

NICK-BREAK TESTS	COUPON LOCATION	REMARKS	AC. CEPTED	RE. JECTED
	1	<i>NT1</i>	<i>clean No defect</i>	<input checked="" type="checkbox"/>
2	<i>NB2</i>	<i>Small 1/4 Gas Pocket near Cap</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	<i>NT2</i>	<i>clean No defect</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	<i>NB1</i>	<i>clean No defect</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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>Ed M... [Signature]</i>		TITLE	<i>Welding Inspector</i>	