

CONSTRUCTION: JOINING OF PIPES BY WELDING

Issued: 2-18-08 Revised: _____ Number: 4A Page: _____

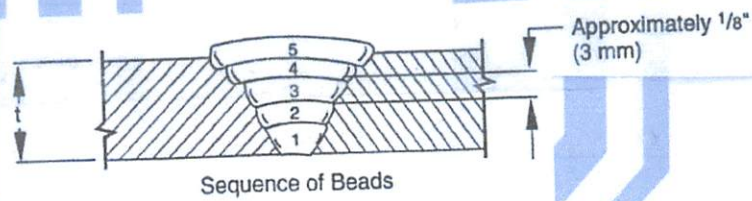
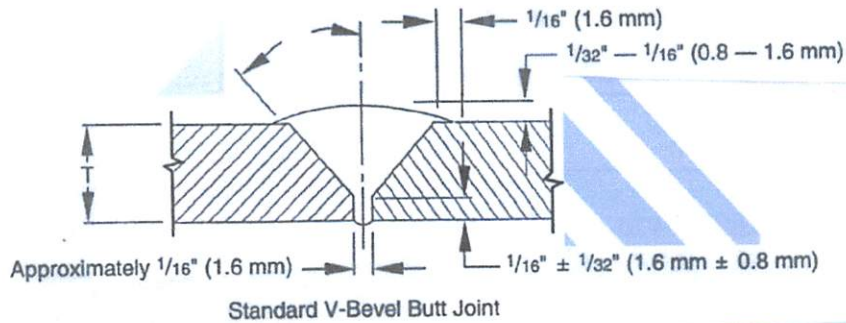
STANDARD WELDING PROCEDURE SPECIFICATION # 4A

- 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 .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: 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 N/A 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	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 AWS A5.1–A5.5

WELD TEST REPORT

(USE SEPARATE FORM FOR EACH WELDING PROCEDURE)

DATE <i>Aug 14, 2007</i>	WELDER'S NAME <i>Jimmie Moore</i>		SOCIAL SECURITY NUMBER <i>1536</i>		
LOCATION <i>Guymon</i>	NAME OF CONTRACTOR OR COMPANY <i>West Texas Gas</i>	RIGHT HANDED <input checked="" type="checkbox"/> LEFT HANDED <input type="checkbox"/>	REQUALIFYING TEST <input checked="" type="checkbox"/> QUALIFYING TEST <input checked="" type="checkbox"/> LINE TEST <input type="checkbox"/>		
POSITION INCLINED <input checked="" type="checkbox"/> FIXED <input type="checkbox"/> HORIZONTAL <input type="checkbox"/>	ELECTRIC ARC <input checked="" type="checkbox"/> OX-ACETYLENE <input type="checkbox"/>	INDOORS <input type="checkbox"/> OUTDOORS <input checked="" type="checkbox"/>	WEATHER <i>CLR</i>	TEMPERATURE <i>103°</i>	TIME OF DAY <i>4:00</i>
PIPE SPECIFICATION <i>API 5LX42</i>	PIPE MANUFACTURER <i>KONOSTAR</i>	WALL THICKNESS <i>.145</i>	DIAMETER (OD) <i>1 1/2"</i>	WEIGHT PER FOOT <i>2.72</i>	
MAKE OF WELDING MACHINE <i>Lincoln-E</i>	SIZE <i>200</i>	MAKE OF OX-ACETYLENE APPARATUS —	WELDING NOZZLE SIZE —	OX-ACETYLENE PRESSURE FLOWING —	
BRAND OF ELECTRODE <i>Lincoln-Shield Arc</i>	BRAND OF OX-ACETYLENE ROD AND SIZE —	NUMBER OF PASSES - OX-ACETYLENE WELD —	WELDING PROCEDURE NO. <i>4A</i>		

PIPE WELD	ELECTRODE TYPE AND SIZE	MACHINE SETTINGS		AMPERAGE RG.	VOLTAGE RG.
		COARSE	FINE		
STRINGER	<i>3/32 5pt</i>	<i>130-80</i>	<i>40</i>	<i>52-70</i>	<i>34-42</i>
HOT PASS	<i>3/32 5pt</i>	<i>130-80</i>	<i>43</i>	<i>35-66</i>	<i>40-45</i>
FILLER (S)	<i>1/8 5pt</i>	<i>130-80</i>	<i>50</i>	<i>65-82</i>	<i>40-46</i>
CAP PASS	<i>1/8" 5pt</i>	<i>130-80</i>	<i>50</i>	<i>60-90</i>	<i>35-48</i>

*2014
Additional
API-1104*

TENSILE TESTS	COUPON			CROSS SEC. AREA SQ. IN.	LOAD	%ELONG.	COMPUTED TENSIL PSI	REMARKS	AC-CEPTED	RE-JECTED
	LOCATION	LENGTH	WIDTH							
1										
2	<i>Tested Under API 1104 Guidelines 8th Edition</i>									
3										
4										

BEND TESTS	COUPON LOCATION	TYPE OF BEND	REMARKS	AC-CEPTED	RE-JECTED
	1	<i>Root Bend - A1</i>		<i>Full Pen - Pipe Rip</i>	<input checked="" type="checkbox"/>
2					
3					
4					

NICK-BREAK TESTS	COUPON LOCATION	REMARKS	AC-CEPTED	RE-JECTED
	1	<i>A1</i>	<i>Clean - full Pen</i>	<input checked="" type="checkbox"/>
2				
3				
4				

This weld has been visually and destructively tested in accordance with API-1104

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 Moschak</i>		TITLE <i>Welding Inspector</i>		

10/14/2000
Johnson

West Fork

4/14/48
Johnson

West Fork

Johnson

130-51	44	23-10	34-13
130-50	43	22-09	40-42
130-50	38	22-08	40-40
130-50	30	20-00	32-48

4/14/48
4/14/48
4/14/48
4/14/48

Johnson

130-51 - A1

Full view - 1/4 in

A1

Johnson - Full view

Johnson

Johnson