

CONSTRUCTION: JOINING OF PIPES BY WELDING

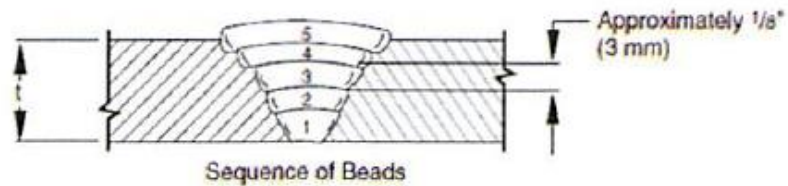
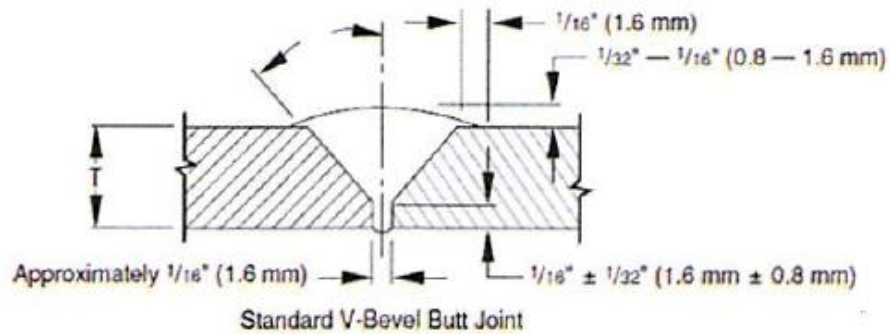
Issued: 2-18-2007 Revised: _____ Number: 5A Page: _____

STANDARD WELDING PROCEDURE SPECIFICATION #: 5A

- A. Process: Manual Electric Arc
 - B. Material: API-5L Grade A thru X42
 - C. Diameter and Wall Thickness: 8" thru 12" and 0.188 thru 0.500 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 4 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 10-12 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 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.

Number: 5A Page: _____

CONSTRUCTION: JOINING OF PIPES BY WELDING



Note: Dimensions are for example only.

Bead No.	Electrode Diameter	Amperage Range	Voltage Range	Type Rod	Notes
1	1/8	95-110	25-35	E6010 5P+	
2	1/8	95-115	30-40	E6010 5P+	
3	5/32	105-120	30-40	E6010 5P+	
4	5/32	100-130	25-45	E6010 5P+	
5					

Bead No.	Notes
5	Additional passes may be made using E6010 3/16 within amperage range 132-170 and volt range 25-35

CONSTRUCTION: JOINING OF PIPES BY WELDING

WELD TEST REPORT

(USE SEPARATE FORM FOR EACH WELDING PROCEDURE)

DATE 8-13-2007		WELDER'S NAME James Moore		SOCIAL SECURITY NUMBER 442-52-1574	
LOCATION GUNN		NAME OF CONTRACTOR OR COMPANY West Texas Gas		RIGHT HANDED <input checked="" type="checkbox"/>	LEFT HANDED <input type="checkbox"/>
POSITION INCLINED <input type="checkbox"/> HORIZONTAL <input checked="" type="checkbox"/> FIXED <input type="checkbox"/>		ELECTRIC ARC <input checked="" type="checkbox"/> INDOORS <input type="checkbox"/> OX-ACETYLENE <input type="checkbox"/> OUTDOORS <input checked="" type="checkbox"/>		WEATHER CL	TEMPERATURE 100
PIPE SPECIFICATION API 5L X 42		PIPE MANUFACTURER Loveland		WALL THICKNESS 1.188	DIAMETER (OD) 8.5
MAKE OF WELDING MACHINE Lin		SIZE 300		MAKE OF OX-ACETYLENE APPARATUS N/A	WELDING NOZZLE SIZE N/A
BRAND OF ELECTRODE N/A		BRAND OF OX-ACETYLENE ROD AND SIZE N/A		NUMBER OF PASSES - OX-ACETYLENE WELD N/A	WELDING PROCEDURE NO. 5A

PIPE WELD	ELECTRODE TYPE AND SIZE		MACHINE SETTINGS		AMPERAGE RG.	VOLTAGE RG.
			COARSE	FINE		
STRINGER	Lin	1/8 5PT	120-190	35	95-110	25-35
HOT PASS	Lin	1/8 5PT	120-190	45	95-115	30-40
FILLER (S)	Lin	5/32 5PT	120-190	50	105-120	30-40
CAP PASS	Lin	5/32 5PT	120-190	60	100-130	25-45

Tested under API 1104 2004 Edition

TENSILE TESTS	COUPON			GROSS SEC. AREA SQ. IN.	LOAD	% ELONG.	COMPUTED TENSIL PSI	REMARKS	AC-CEPTED	RE-JECTED
	LOCATION	LENGTH	WIDTH							
1	T1	8"	1"	1.190	12,000	15%	63,157	No defect	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	T2	8"	1"	1.190	12,000	15%	63,157	No defect	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3										
4										

BEND TESTS	COUPON LOCATION	TYPE OF BEND	REMARKS	AC-CEPTED	RE-JECTED
	1	TR	Root	No Defects	<input checked="" type="checkbox"/>
2	TF	Face	"	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	BR	Root	"	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	BF	Face	"	<input checked="" type="checkbox"/>	<input type="checkbox"/>

NICK-BREAK TESTS	COUPON LOCATION	REMARKS	AC-CEPTED	RE-JECTED
	1	BN	Clear Metal	<input checked="" type="checkbox"/>
2	TN	" "	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 Ed Mansbach		TITLE Welding Inspector		