

CONSTRUCTION: JOINING OF PIPES BY WELDING

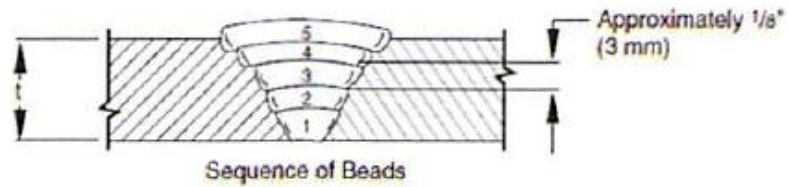
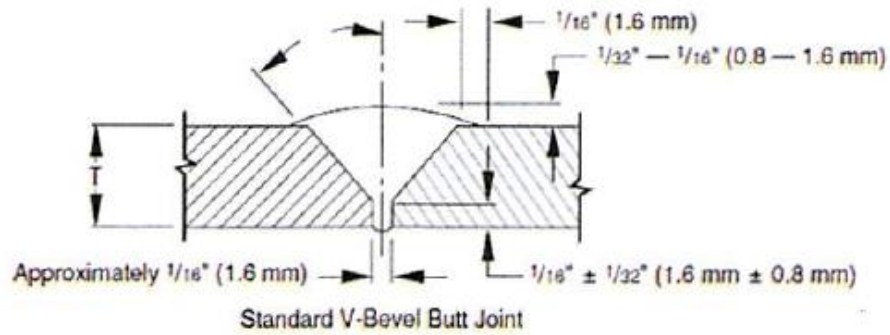
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STANDARD WELDING PROCEDURE SPECIFICATION #: 5G

- A. Process: Manual Electric Arc
- B. Material: API-5L Grade API-5L Grade A thru X42
- C. Diameter and Wall Thickness: 8" thru 12" & 0.188 thru 0.500 WT
- D. Joint Design: Standard Vee Groove 30 degrees
- E. Filler Metal & Number of Beads: Electrode Classification Electrode E6010 & E8010
AWS Class A 5.1 — 5.1 Minimum of 3 Passes
- F. Electric or Flame Characteristics: D.C. Reverse Polarity Electrode Positive
- G. Position: INCLINED AT 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" per minute maximum
- O. *Preheat, Stress Relief: Maximum of 300°F Minimum 150°F Preheat 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. Welds 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 0.32% or C+1/4 Mn
exceeds 0.65% 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	100-125	28-35	E6010 5P+	
2	1/8	85-110	25-35	E8010	
3	1/8 **	100-115	20-30	E8010	
4	5/32	105-135	20-35	E8010	
5	*				

Bead No.	Notes
	Electrodes may be substituted within Rod group 1&2 of AWS A5.1 - A5.5
**	Pass 3 may be made with 5,32 at same settings as pass 4
*	Additional passes may be made using 8010 3/16 at amp range 132-170 and 25-35 volts

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WELD TEST REPORT

(USE SEPARATE FORM FOR EACH WELDING PROCEDURE)

DATE 8-13-07		WELDER'S NAME Perrell Lawford		SOCIAL SECURITY NUMBER XXX-XX-2519	
LOCATION GUNNISON		NAME OF CONTRACTOR OR COMPANY West Texas Gas		RIGHT HANDED <input checked="" type="checkbox"/> LEFT HANDED <input type="checkbox"/>	
POSITION UP		ELECTRIC ARC <input checked="" type="checkbox"/> OX-ACETYLENE <input type="checkbox"/>		REQUALIFYING TEST <input type="checkbox"/> QUALIFYING TEST <input checked="" type="checkbox"/> LINE TEST <input type="checkbox"/>	
INCLINED <input type="checkbox"/> FIXED <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>		INDOORS <input type="checkbox"/> OUTDOORS <input checked="" type="checkbox"/>		WEATHER CL TEMPERATURE 100	
PIPE SPECIFICATION API 5L 60X42		PIPE MANUFACTURER Republic		TIME OF DAY M.D	
WALL THICKNESS .188		DIAMETER (OD) 8.50		WIND BREAK USED NO	
MAKE OF WELDING MACHINE Lin		SIZE 350		WEIGHT PER FOOT 16.94	
BRAND OF ELECTRODE Lincoln		MAKE OF OX-ACETYLENE APPARATUS N/A		WELDING NOZZLE SIZE N/A	
		OX-ACETYLENE PRESSURE FLOWING N/A		WELDING PROCEDURE NO. 5G	

	ELECTRODE TYPE AND SIZE		MACHINE SETTINGS		AMPERAGE RG.	VOLTAGE RG.
			COARSE	FINE		
PIPE WELD	STRINGER	Lin 1/8 5P+	120-190	45	100-125	28-35
	HOT PASS	Lin 1/8 70+	120-190	55	85-110	25-35
	FILLER (S)	Lin 1/8 70+	120-190	55	100-115	20-30
	CAP PASS	Lin 5/32 70+	120-190	65	105-135	20-35

	COUPON			CROSS SEC. AREA SQ. IN.	LOAD	% ELONG.	COMPUTED TENSIL PSI	REMARKS	AC-CEPTED	RE-JECTED
	LOCATION	LENGTH	WIDTH							
TENSILE TESTS	1 T1	8"	1"	.190	12,500	20%	65,789	No defect	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	2 T2	8"	1"	.190	12,500	25%	65,789	No defect	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	3									
	4									

	COUPON LOCATION	TYPE OF BEND	REMARKS	AC-CEPTED	RE-JECTED
	BEND TESTS	1 R1	Root	No defect	<input checked="" type="checkbox"/>
	2 R2	Root	No defect	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	3 F1	Face	"	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	4 F2	Face	"	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	COUPON LOCATION	REMARKS	AC-CEPTED	RE-JECTED
	NICK-BREAK TESTS	1 TN	Clear metal	<input checked="" type="checkbox"/>
	2 BN	" "	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	3	This weld has been visually and destructively tested in accordance with API-1104		
	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: 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 Marshall		TITLE Welding Inspector		