

CONSTRUCTION: JOINING OF PIPES BY WELDING

Issued: 8-13-07 Revised: 4-8-2021 Number: 5G Page: _____

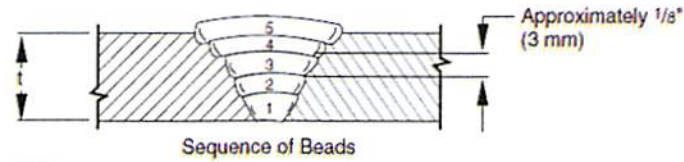
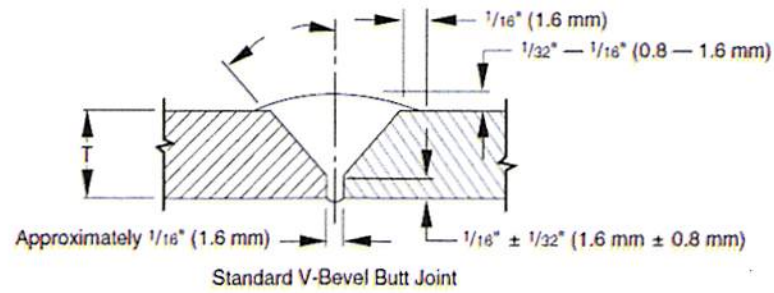
STANDARD WELDING PROCEDURE SPECIFICATION # 5G

- A. Process: Manual Electric Arc
- B. Material: API-5L Grade API-5L Grade A thru X 42
- C. Diameter and Wall Thickness: 8" thru 12" and .188 thru .500 WT
- D. Joint Design: Standard Vee Groove 30 degrees
- E. Filler Metal and Number of Beads: Electrode Classification
Electrode E6010 & E8010 AWS Class A 5.1—5.5 Minimum of 3 Passes
- F. Electrical 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 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.

Number: 5G Page: _____

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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 70+	
3	1/8 **	100-115	20-30	E8010 70+	
4	5/32	105-135	20-35	E8010 70+	
5	*				

Bead No.	Notes
	Electrodes may be substituted within Rod group 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 70+ 3/16 at amp Range 132-170 and 25-35 volts

WELD TEST REPORT

(USE SEPARATE FORM FOR EACH WELDING PROCEDURE)

DATE 8-13-07	WELDER'S NAME Derrell Lawford		SOCIAL SECURITY NUMBER XXX-XX-2519	
LOCATION COMMON	NAME OF CONTRACTOR OR COMPANY West Texas Gas	RIGHT HANDED <input checked="" type="checkbox"/> LEFT HANDED <input type="checkbox"/>	REQUALIFYING TEST <input type="checkbox"/> QUALIFYING TEST <input checked="" type="checkbox"/>	LINE TEST <input type="checkbox"/>
POSITION INCLINED <input type="checkbox"/> FIXED <input type="checkbox"/> <input type="checkbox"/> HORIZONTAL	ELECTRIC ARC <input checked="" type="checkbox"/> INDOORS <input type="checkbox"/> OX-ACETYLENE <input type="checkbox"/> OUTDOORS <input checked="" type="checkbox"/>	WEATHER CL	TEMPERATURE 100	TIME OF DAY MID
PIPE SPECIFICATION API 5L 60x42	PIPE MANUFACTURER Republic	WALL THICKNESS .188	DIAMETER (OD) 8 5/8	WEIGHT PER FOOT 16.94
MAKE OF WELDING MACHINE Lin	SIZE 300	MAKE OF OX-ACETYLENE APPARATUS N/A	WELDING NOZZLE SIZE N/A	OX-ACETYLENE PRESSURE FLOWING N/A
BRAND OF ELECTRODE LINCOLN	BRAND OF OX-ACETYLENE ROD AND SIZE N/A	NUMBER OF PASSES - OX-ACETYLENE WELD N/A	WELDING PROCEDURE NO. 5G	

PIPE WELD	ELECTRODE TYPE AND SIZE			MACHINE SETTINGS		AMPERAGE RG.	VOLTAGE RG.
				COARSE	FINE		
	STRINGER	Lin	1/8	5P+	120-190	45	100-125
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

TENSILE TESTS	COUPON			CROSS SEC. AREA SQ. IN.	LOAD	% ELONG.	COMPUTED TENSIL PSI	REMARKS	AC-CEPTED	RE-JECTED
	LOCATION	LENGTH	WIDTH							
1	T1	8"	1"	.190	12,500	20%	65,289	No defect	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	T2	8"	1"	.190	12,500	25%	65,289	No defect	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3										
4										

BEND TESTS	COUPON LOCATION	TYPE OF BEND	REMARKS	AC-CEPTED	RE-JECTED
	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"/>

NICK-BREAK TESTS	COUPON LOCATION	REMARKS	AC-CEPTED	RE-JECTED
	1	TN	Clean 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				

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 Ed Maschak		TITLE	Welding Inspector	