

CONSTRUCTION: JOINING OF PIPES BY WELDING

Issued: 7-07-2019 Revised: 12-05-2022 Number: 6AH65 Page: _____

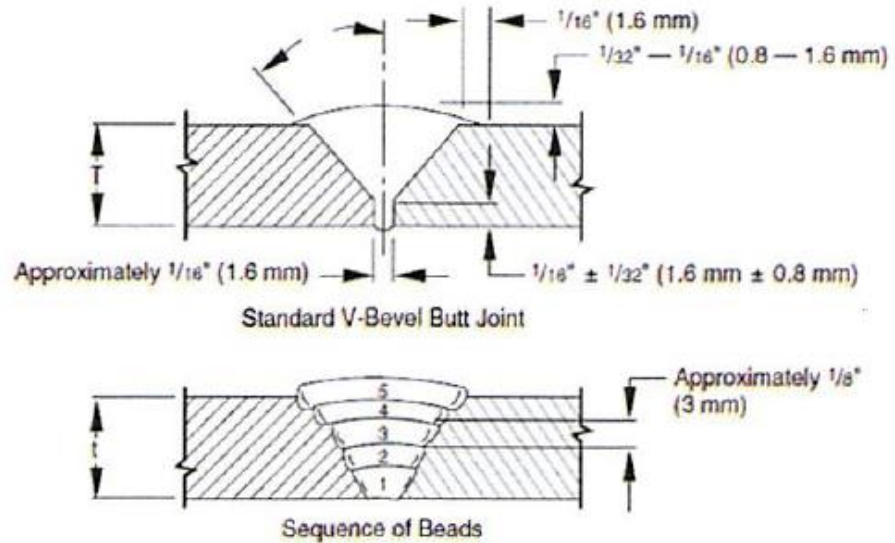
STANDARD WELDING PROCEDURE SPECIFICATION #: 6AH65

- A. Process: Manual Electric Arc
- B. Material: API 5L Grade X65
- C. Diameter and Wall Thickness: Greater than 12" and .188 thru .750 wall thickness
- D. Joint Design: Standard Vee Groove, 30 Degree Bevel
- E. Filler Metal and Number of Beads: Electrode Classification:
Electrode E6010 and E8010, AWS Class A5.1 – A5.5, Minimum of 4 Passes
- F. Electrical or Flame Characteristics: Reverse Polarity, Electrode Positive
- G. Position: Fixed Horizontal
- 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	130-170	25-32	E6010 5P+	
2	3/16	130-190	26-36	E6010/E8010	See below
3	3/16	135-195	25-35	E6010/E8010	
4	3/16	135-195	25-35	E6010/E8010	
5	3/16	125-180	25-35	E6010/E8010	

Bead No.	Notes
1-5	Electrodes may be substituted within rod group 1&2 of AWS A5.1-A5.5
2	Hot pass may be made using 5/32 within same amperage range
4	Additional passes may be made at the same setting

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

DATE 8-20-08		WELDER'S NAME Darrell Lawstorf			SOCIAL SECURITY NUMBER 2519			
LOCATION Summit		NAME OF CONTRACTOR OR COMPANY WTG		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 checked="" type="checkbox"/> HORIZONTAL <input checked="" type="checkbox"/>	ELECTRIC ARC <input checked="" type="checkbox"/> INDOORS <input checked="" type="checkbox"/> OX-ACETYLENE <input type="checkbox"/> OUTDOORS <input type="checkbox"/>		WEATHER CL	TEMPERATURE 80	TIME OF DAY MORN	WIND BREAK USED N/A		
PIPE SPECIFICATION MSL X 52		PIPE MANUFACTURER Ra		WALL THICKNESS .281		DIAMETER (OD) 20	WEIGHT PER FOOT 59.18	
MAKE OF WELDING MACHINE Lin		SIZE 200	MAKE OF OX-ACETYLENE APPARATUS N/A	WELDING NOZZLE SIZE N/A		OX-ACETYLENE PRESSURE FLOWING N/A		
BRAND OF ELECTRODE Lin		BRAND OF OX-ACETYLENE ROD AND SIZE N/A		NUMBER OF PASSES - OX-ACETYLENE WELD N/A		WELDING PROCEDURE NO. GAH 52		

	ELECTRODE TYPE AND SIZE			MACHINE SETTINGS		AMPERAGE RG.	VOLTAGE RG.	REMARKS	ACCEPTED	REJECTED
				COARSE	FINE					
PIPE WELD	STRINGER	Lin	5/32	120-190	60	110-125	22-32			
	HOT PASS	Lin	3/32	110-240	70	120-155	24-32			
	FILLER (S)	Lin	3/32	160-240	70	120-150	24-30			
	CAP PASS	Lin	3/16	160-240	80	130-175	25-35			

QUALIFYING TEST FOR GAH 52 Process 14.5 code after 10/1/08

	COUPON			CROSS SEC. AREA SQ. IN.	LOAD	% ELONG.	COMPUTED TENSIL PSI	REMARKS	ACCEPTED	REJECTED
	LOCATION	LENGTH	WIDTH							
TENSILE TESTS	1 T1	8	1"	.290	20,000	20.9%	68,965	No defect		
	2 T2	8	1"	.290	20,000	"	68,965	"		
	3 B1	8	1"	.290	21,000	"	72,413	"		
	4 B2	8	1"	.290	20,000	"	68,965	"		

	COUPON LOCATION	TYPE OF BEND	REMARKS	ACCEPTED	REJECTED
	1 R1	R2	Root x 2	No defects	
2 R3	R4	Root x 2	No defects		
3 F1	F2	Face x 2	No defects		
4 F3	F4	Face x 2	Small opening on edge x 1		

	COUPON LOCATION	REMARKS	ACCEPTED	REJECTED
	1 TR1		Clean metal no defects	
2 TL2		"		
3 BR1		"		
4 BL2		"		

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 OX-ACETYLENE <input checked="" type="checkbox"/>	TEE WELD	QUALIFIED <input type="checkbox"/> NOT QUALIFIED <input type="checkbox"/>	ELECTRIC ARC OX-ACETYLENE <input type="checkbox"/>
TESTED BY	SIGNATURE Ed Mack		TITLE Welding Inspector		