

# CONSTRUCTION: JOINING OF PIPES BY WELDING

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Issued: 4-23-2021 Revised: \_\_\_\_\_ Number: FP 12-12 Page: \_\_\_\_\_

## STANDARD WELDING PROCEDURE SPECIFICATION FP 12-12

- A. Process: Manual Electric Arc
- B. Material: Branch and Heade A thru X52 Grade Material
- C. Diameter and Wall Thickness: Branch and Header 4" thru 12", .250 thru .500 WT
- D. Joint Design: Standard Vee Groove ----- FILLET WELD
- E. Filler Metal and Number of Beads: Electrode Classification  
Electrode E 6010 AWS Class A 5.1-A5.5 Minimum of 3 Passes
- F. Electrical or Flame Characteristics: D.C. Reverse Polarity, Electrode Positive
- G. Position: Header on Horizontal-Branch 90 deg and downward
- H. Direction of Welding: 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: None
- L. Removal of Line-Up Clamp: None
- M. Cleaning: Taper grind starts and craters and flatten crown by grinding stringer bead,  
hot pass may be ground if desired, 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.

Notes: Tacks may be made with the branch in an upward position from the header and in an area where samples will not be taken.

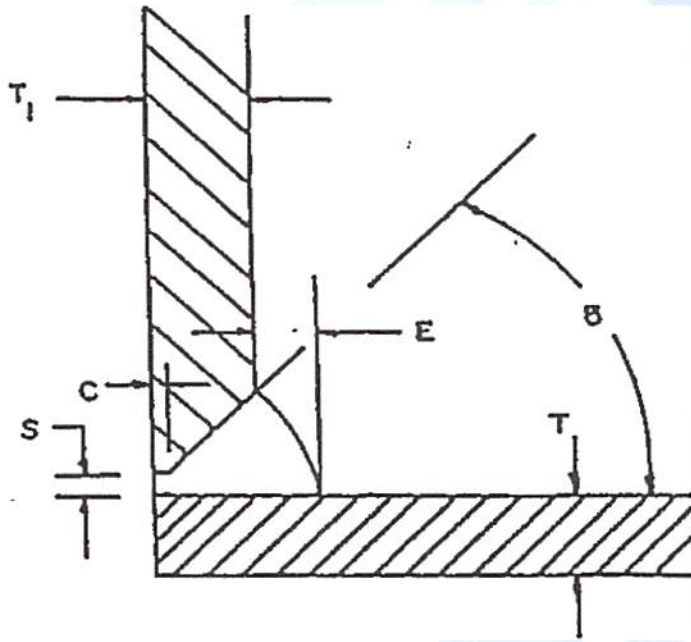
\*X-Rated pipe must be stress relief if the carbon content exceeds 32% or C+1/4 Mn exceeds 65%. Heating of X-Rated pipe is limited to 600°F.

Number: FP 12-12 Page: \_\_\_\_\_



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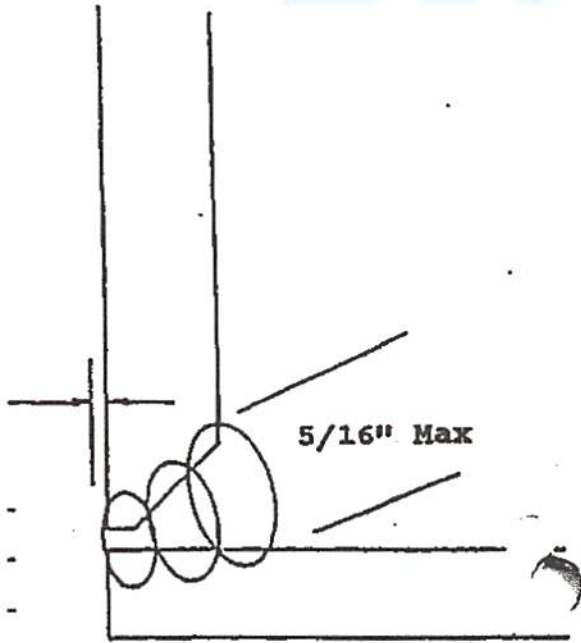


WTG



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Main wall thickness    T .250 - .500

Branch Wall Thickness    T .250 - .500

Bevel    B 35deg +/- 5deg

Spacing    S 1/32 / 3/32

Root Face    C 1/16 +/- 1/32

Toe Extention    E 1/4 - 5/16



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Bead No.	Electrode Diameter	Amperage Range	Voltage Range	Type Rod	Notes
1	1/8 5P+	90-120	20-35	E 6010	
2	1/8 5P	90-135	20-40	E 6010	
3	5/32 5P	90-140	20-40	E 6010	
4	5/32 5P	90-140	20-40	E 6010	
5*					

Bead No.	Notes
1	Electrodes may be substituted within Rod group AWS A5.1—A5.5
*	Additional passes may be made at same settings as Bead #4



WELD TEST REPORT

(USE SEPARATE FORM FOR EACH WELDING PROCEDURE)

Multiple

DATE 4/23/2021	WELDER'S NAME Derrell Lanford	SOCIAL SECURITY NUMBER	
LOCATION Guymon	NAME OF CONTRACTOR OR COMPANY WTG	RIGHT HANDED <input checked="" type="checkbox"/> LEFT HANDED <input type="checkbox"/>	REQUALIFYING TEST <input checked="" type="checkbox"/> QUALIFYING TEST <input type="checkbox"/> LINE TEST <input type="checkbox"/>
POSITION INCLINED <input type="checkbox"/> FIXED <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>	ELECTRIC ARC <input checked="" type="checkbox"/> OX-ACETYLENE <input type="checkbox"/>	INDOORS <input checked="" type="checkbox"/> OUTDOORS <input type="checkbox"/>	WEATHER TEMPERATURE CL
PIPE SPECIFICATION API 5L X42	PIPE MANUFACTURER Tytube	WALL THICKNESS .250"	TIME OF DAY 9:00 AM DIAMETER (OD) 12.750" WEIGHT PER FOOT 33.41
MAKE OF WELDING MACHINE Lincoln	SIZE 250	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. FP 12/12

PIPE WELD	ELECTRODE TYPE AND SIZE			MACHINE SETTINGS		AMPERAGE RG.	VOLTAGE RG.	This weld has been visually inspected and distributively tested in accordance to API-1104
	STRINGER	HOT PASS	FILLER (S)	CAP PASS	COARSE	FINE		
	1/8" SP+ 6010	120-190	50	90-120	20-35			
	1/8" SP 6010	120-190	70	90-135	20-40			
	5/32" SP 6010	120-190	70	90-140	20-40			
	9/32" SP 6010	120-190	60	90-140	20-40			

TENSILE TESTS	COUPON			CROSS. SEC. AREA SQ. IN.	LOAD	%ELONG.	COMPUTED TENSIL PSI	REMARKS	AC-CEPTED	RE-JECTED
	LOCATION	LENGTH	WIDTH							
1										
2										
3										
4										
	COUPON LOCATION	TYPE OF BEND			REMARKS			AC-CEPTED	RE-JECTED	

BEND TESTS	COUPON			CROSS. SEC. AREA SQ. IN.	LOAD	%ELONG.	COMPUTED TENSIL PSI	REMARKS	AC-CEPTED	RE-JECTED
	LOCATION	LENGTH	WIDTH							
1										
2										
3										
4										

NICK-BREAK TESTS	COUPON LOCATION	REMARKS				AC-CEPTED	RE-JECTED
	1	C1	Clean Gray Metal	No Defects			
2	T1	Clean Gray Metal	No Defects				
3	C2	Clean Gray Metal	No Defects				
4	T2	Clean Gray Metal	No Defects				

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 COLDROLL UNDERCUT	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		TITLE	Chris L Epps CWI 18041221 QC1 EXP. 4/1/2024	

