



WELDING PROCEDURE SPECIFICATION

WPS- 2007-31 **REV. NO.:** 0 **DATE:** 9/1/2004 ****APPLICABILITY****
WELDING PROCESS/ES GTAW- and GTAW- **ASME:** X **AWS:**
SUPPORTING PQ 200-31-1 **OTHER:**

JOINT This WPS shall be used in conjunction with the General Welding Standards (GWS) and Welding Fabrication Procedure (WFP) sections and criteria for joint details, repairs, NDE, inspection etc.

Weld Joint Type Butt/Fillet	Class:	Full or Partial Penetration
See GWS 1-06 for details	Preparation:	Thermal/Mechanical
Root Opening:	Backing:	Gas
Backgrind root: N	Backing Mat.:	Helium
Bkgrd Method: N/A	GTAW Flux: N/A	Backing Retainer: N/A

FILLER METALS: **Class:** ERCuSi-A and ERCuSi-A
A No: **SFA Class:** 5.27 and 5.27 **F No:** 32 and 32 **Size:** 3/32 1/8
Insert: N **Insert Desc.:** N/A **Weld Metal Thickness Range:**
Flux: Type: N/A **Size:** N/A **AWS:** 0.125 thru 0.320
Filler Metal Note: **ASME:** 0.065 thru 0.320

BASE MATERIAL	P No. 31	Gr No.	to: P No. 31	Gr No.
Spec. ASTM B-88	Grade:		to: Spec. ASTM B-88	Grade:
Pipe Dia Range: Groove > 2				
Thickness Range: Groove :	AWS: 0.125	thru 0.320	ASME: 0.065	thru 0.320

QUALIFIED POSITIONS 6G **Vertical Progression:** Up

Preheat Min. Temp.: 50 F	GAS: Shielding:	Helium or Helium
Interpass Max. Temp. F	Gas Composition:	100 % 100 % %
Preheat Maintenance: 50 F	Gas Flow Rate cfh	20 to 35
	Backing Gas/Comp:	Helium 100 %
PWHT: Time @ F Temp.	Backing Gas Flow cfh	1 to 3
Temp. Range: F to F	Trailing Gas/Comp:	N/A %

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Note: For SC/SS/ML-1/ML-2 work, this WPS requires independent review.

WELDING CHARACTERISTICS:

Current: DECN and DECN Tungsten type: EWTH-2 Transfer Mode: N/A
 Ranges: Amps 145 to 200 Pulsing Cycle: 0 to 0
 Volts 18 to 21 Background Current: 0
 Fuel Gas: N/A Flame: N/A Braze temp. F to

WELDING TECHNIQUE: For cleaning, grinding, and inspection criteria refer to Volume 2, Welding Fabrication Procedures

Technique: Manual Cleaning Method: Wire Brush, File, Grind, Chip
 Single Pass of Multi Pass: M Striker or Weave bead (S/W): S/W Oscillation: N
 GMAW Gun Angle °: 0 to 0 Forehand or Backhand for GMAW (F/B): N/A
 Maximum K/J Heat Input Travel speed/ipm: 1 - 6 Gas Cup Size: 3 - 7

PROCEDURE QUALIFIED FOR:

Charpy "V" Notch: N Nil-Ductil Transition Temperature: N Dynamic Tear: N

Comments:

Weld Layer	Manual Process	Filler Metals	Size	Amp Range	Volt Range	Travel ipm	Nozzel Angle	Other
1	GTAW-	ERCuSi-A	3/32	145 200	18 21	1 5	0	
2	GTAW-	ERCuSi-A	1/8	145 200	18 21	2 6	0	
3								
4								
5								
6								
7								
8								

REM. * Weld layers are representative only - actual number of passes and layer sequence may vary due to variations in joint design, thickness and fitup.