



Pyramid Co.
 123 Any Street
 KC, MO 64015

Welding Procedure Specification (WPS)

WPS No.: Example 1b Date: 3/11/2016 Rev.: 0 Page: 1 of 3

By: _____ Date Signed: 3/11/2016

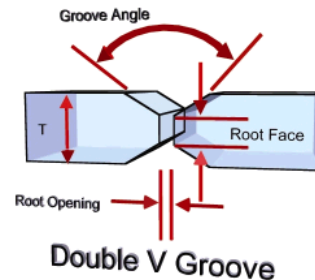
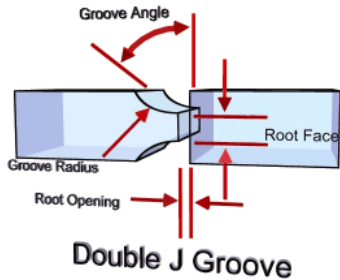
Supporting PQR's: Example 1a *John Smith* CRN: _____

Welding Process(es) / Type(s): (1) GTAW / Manual (2) GMAW / Machine (3) SMAW / Manual

Joints (QW-402)

Joint Design: Groove and fillet welds

Backing: With or without backing Backing Material: variable



Fillet Welds: All fillet sizes on all base metal thicknesses and all diameters.

Retainers: None

Joint notes would appear here.

WELD JOINT DESCRIPTIONS SHOWN ARE NOT INCLUSIVE OF ALL THOSE FOUND ON A JOB. WELD JOINT DESIGN REFERENCE IN AN ENGINEERING SPECIFICATION OR A DESIGN DRAWING SHALL TAKE PRECEDENCE OVER WELD JOINTS SHOWN IN THIS WPS.

Base Metals (QW-403)

P-No.: 1 Thickness Range (in.): 0.1875 to 2.0000
 to P-No.: 1

Base Metal notes would appear here.

Overall WPS Notes would appear here.

Filler Metals (QW-404)

Spec. No. (SFA): (1) 5.18 (2) 5.18 (3) 5.1

AWS No. (Class): (1) ER70S-2 (2) E70C-3C (3) E7018

F No.: (1) 6 (2) 6 (3) 4 A No.: (1, 2, & 3) 1

Weld Metal Thickness Range: (1) 0.2500 in. maximum (2) 1.0000 in. maximum No Pass Greater Than 1/2" Allowed (3) 0.7500 in. maximum No Pass Greater Than 1/2" Allowed

Flux Type: N/A

Flux Trade Name: N/A

Consumable Insert: (1) NA

Other: _____

Flux: (1) NA

Product Form: (1) Bare (Solid) (2) Metal cored

Supplemental Filler Metal: (2) n/a

Strip Thickness or Width (in.): N/A

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<p>Positions (QW-405) Position of Joint: <u>(1, 2, & 3) All Positions</u> Weld Progression: <u>(1, 2, & 3) Any</u> (1) Process1 position notes would appear here. (2) Process2 position notes would appear here. (3) Process3 position notes would appear here.</p>	<p>Postweld Heat Treatment (QW-407) Type: <u>PWHT below lower transformation temperature</u> Temperature Range: <u>1275</u> °F Time Range: <u>1.0 hr./in., 0.25 hr. min.</u> PWHT notes would appear here.</p>
<p>Preheat (QW-406) Preheat Temp. Min.: <u>300</u> °F Interpass Temp. Max.: <u>600</u> °F Preheat Maintenance: <u>None</u> Preheat notes would appear here.</p>	<p>Gas (QW-408) Gas Composition / Flow Rate Shielding: <u>(1) 100% Argon / 14-18 CFH</u> <u>(2) 100% Argon / 11-14 CFH</u> Trailing: <u>(1) None (2) None</u> Backing: <u>(1) None (2) None</u></p>
<p>Electrical Characteristics (QW-409) Current Type / Polarity: <u>(1) DCEN (straight) (2) DCEP (reverse) (3) DCEN (straight)</u> Pulsed Current: <u>(1) NA</u> Tungsten Electrode Type and Size: <u>(1) EWTh-2 / 3/32 (2) N/A (3) N/A</u> Mode of Metal Transfer for GMAW(FCAW): <u>(1) N/A (2) Short-circuiting arc (3) N/A</u> Max. Heat Input (J/in): <u>(1, 2, & 3) None</u></p>	
<p>Technique (QW-410) Thermal Processes: <u>(1, 2, & 3) No</u> String or Weave Bead: <u>(1) Stringer and weave bead (2) Stringer and weave bead (3) Stringer bead</u> Orifice or Gas Cup Size: <u>(1) #5 to #10 (2) 3/8" to 5/8"</u> Initial and Interpass Cleaning: <u>With wire brush clean 1 inch (25 mm) on both sides of weld joint</u> Method of Back Gouging: <u>When required, grind until all defects are removed.</u> Oscillation: <u>(2) n/a</u> Contact Tube to Work Distance: <u>(2) .5</u> Single or Multiple Passes (per side): <u>(1) Single and multipass (2) Single and multipass (3) Single and multipass</u> Single or Multiple Electrodes: <u>(2) Single electrode</u> Peening: <u>(1, 2, & 3) None</u> Electrode Spacing: <u>(2) .2</u></p>	
<p>(1) Process1 electrical notes would appear here. (2) Process2 electrical notes would appear here. (3) Process3 electrical notes would appear here.</p>	

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Process Welding Parameters

Weld Layer(s) and/or Pass(es)	Process	Filler Metal		Current		Voltage Range	Travel Speed Range (in/min)
		Class	Diameter (in.)	Type / Polarity	Amperage Range		
Any	GTAW	ER70S-2	1/16	DCEN (straight)	70-150	n/r	Var.
Any	GTAW	ER70S-2	3/32	DCEN (straight)	80-180	n/r	Var.
Any	GTAW	ER70S-2	1/8	DCEN (straight)	130-275	n/r	Var.
Any	GTAW	ER70S-2	3/16	DCEN (straight)	200-375	n/r	Var.
Any	GMAW	E70C-3C	0.035	DCEP (reverse)	80-145	17-22	Var.
Any	GMAW	E70C-3C	0.045	DCEP (reverse)	110-145	18-23	Var.
Any	GMAW	E70C-3C	1/16	DCEP (reverse)	165-300	20-25	Var.
Any	SMAW	E7018	3/32	DCEN (straight)	70-110	n/r	Var.
Any	SMAW	E7018	1/8	DCEN (straight)	90-160	n/r	Var.
Any	SMAW	E7018	5/32	DCEN (straight)	130-220	n/r	Var.
Any	SMAW	E7018	3/16	DCEN (straight)	200-300	n/r	Var.
Any	SMAW	E7018	7/32	DCEN (straight)	250-350	n/r	Var.

Notes

Additional Optional Notes would appear here.