Pyramid Co.
123 Any Street
KC, MO 64015

Procedure Qualification Record (PQR)

PQR No.: **Example 1a** Date: **1/1/2016** WPS No.:

JOINT DESIGN (QW-402)
Weld Type: Groove weld
Groove Type: Single-V groove
Backing: Open butt, no back weld
Root Opening: 1/16 in. Root Face: 1/8 in.
Groove Angle: 70 °
Joint Design notes would appear here

BASE METALS (QW-403)
Specification Type and Grade:
SA-516, Grade 70 to SA-516, Grade 70
P-No. 1 Group No. 2 to P-No. 1 Group No. 2
Thickness (in.): 1
Base Metal notes would appear here

PREHEAT (QW-406)
Minimum Preheat Temperature: 300 °F
Maximum Interpass Temperature: 600 °F
Preheat Maintenance: NA
Preheat notes would appear here

POSTWELD HEAT TREATMENT (QW-407)
Type: PWHT performed below lower transformation temp.
PWHT Temperature: 1275 °F
PWHT Holding Time: 2 hr.
PWHT notes would appear here

	1st Process	2nd Process
Weld Process / Method	**GTAW / Manual**	**GMAW / Machine**
POSITION (QW-405)		
Position of Joint	1G - Flat	1G - Flat
Weld Progression	N/A	N/A
Notes	Process1 Position notes would appear here	Process2 Position notes would appear here
GAS (QW-408)		
Shielding Gas / CFH	100% Argon / 15	100% Argon / 12
Trailing Gas / CFH	None / -	None / -
Backing Gas / CFH	None / -	None / -
FILLER METAL (QW-404)		
AWS Classification	ER70S-2	E70C-3C
SFA Spec. / F-No.	5.18 / 6	5.18 / 6
A-No. or Chemical Composition	1	1
Filler Metal Trade Name	Trade Name would appear here	Trade Name would appear here
Filler Metal Product Form	Bare (Solid)	Metal cored
Supplemental Filler Metal		n/a
Consumable Insert	NA	
GTAW Flux	NA	
Weld Deposit 't' (in.)	0.125	0.5
Pass Greater Than ½":		No
Filler Metal Size (in.)	1/8 | - | -	3/32 | 1/8 | -
ELECTRICAL (QW-409)		
Amperage Used	80 | - | -	90 | 120 | -
Voltage Used	50 | - | -	120 | 240 | -
Wire Feed Speed (in/min)		4 | |
Travel Speed (in/min)	3 | - | -	4 | 6 | -
Max. Heat Input (J/in)	1230	1234
Current Type and Polarity	DCEN (straight)	DCEP (reverse)
Tungsten Type / Size	EWTh-2 / 3/32	
Pulsed Current	NA	
Transfer Mode		Short-circuiting arc
TECHNIQUE (QW-410)		
Thermal Processes:	No	No
Stringer or Weave Bead	Stringer and weave bead	Stringer and weave bead
Multiple / Single Pass (per side)	Single and multipass	Single and multipass
Nozzle / Gas Cup Size	.5	.2
Contact Tube to Work Distance		.5
Oscillation		n/a
Multiple or Single Electrode(s)		Single electrode
Electrode Spacing		.2

(1) Process1 Specific Notes would appear here

(2) Process2 Specific Notes would appear here

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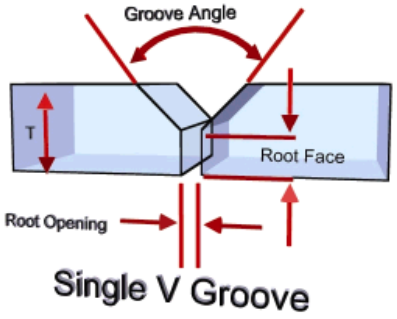
PQR No.: **Example 1a**

	3rd Process
Weld Process / Method	**SMAW / Manual**
POSITION (QW-405)	
Position of Joint	1G - Flat
Weld Progression	N/A
Notes	Process3 Position notes would appear here
FILLER METAL (QW-404)	
AWS Classification	E7018
SFA Spec. / F-No.	5.1 / 4
A-No. or Chemical Composition	1
Filler Metal Trade Name	Trade Name would appear here
Weld Deposit 't' (in.)	0.375
Pass Greater Than ½":	No
Filler Metal Size (in.)	1/4 | - | -
ELECTRICAL (QW-409)	
Amperage Used	85 | - | -
Voltage Used	125 | - | -
Travel Speed (in/min)	4 | - | -
Max. Heat Input (J/in)	N/R
Current Type and Polarity	DCEN (straight)
TECHNIQUE (QW-410)	
Thermal Processes:	No
Stringer or Weave Bead	Stringer bead
Multiple / Single Pass (per side)	Single and multipass

(3) Process3 Specific Notes would appear here

Joint Detail Image



Additional Welding Parameters

Layer(s) and/or Pass(es)	Process	Filler Metal AWS Classification	Filler Metal Size (in.)	Current Type and Polarity	Current Amperage Range	Voltage Range	Travel Speed Range (in/min)
1	GTAW	ER70S-2	1/8	DCEN (straight)	80	50	3
2	GMAW	E70C-3C	1/8	DCEP (reverse)	90	120	4
3	GMAW	E70C-3C	3/32	DCEP (reverse)	120	240	6
4	GMAW	E70C-3C	3/32	DCEP (reverse)	120	240	6
5	SMAW	E7018	1/4	DCEN (straight)	85	125	4

Pass 1 is Root
Pass 2-4 are Fill
Pass 3 is Cover

Notes

Any additional notes would appear here

Pyramid Co.

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PQR No.: **Example 1a**

Tensile Test (QW-150)

Specimen No.	Width (in.)	Thickness (in.)	Area (in^2)	Ultimate Total Load (lb)	Ultimate Unit Stress (PSI)	Failure Type and Location
4-2 TOP	0.751	0.340	0.2553	17895	70100	Base metal
4-2 BOT	0.755	0.342	0.2582	18205	70500	Base metal

Guided Bend Tests (QW-160)

Type and Figure No.	Result	Type and Figure No.	Result
QW-462.3(b) Face bend	Acceptable	QW-462.3(b) Root bend	Acceptable
QW-462.3(b) Face bend	Acceptable	QW-462.3(b) Root bend	Acceptable

Hardness Test - Vickers hardness

Location	Readings								
SA-335, Grade P11 BM	141	141	131	173	143	150	143	145	
SA-335, Grade P11 HAZ	138	150	176	186	158	142	141	142	147
Weld metal	188	193	205	196	197	209	195	196	199
Weld metal Line 2	198	200	203	201	207	203	187	132	138
SA-335, Grade P11 HAZ2	146	167	176	156	152	152			
Weld metal Line 3	144	136	135	162	160	182			

Visual Examination: Acceptable

Liquid Penetrant Test: NA

Macro-Examination Test: NA

Chemical Analysis: C=0.1%, Cr=0.3%, Mo=0.08%, Ni=0.3%, Mn=1.7%, Si=0.6%, P=0.03%, S=0.03%, V=0.02%, Al=0.02%, Cu=0.3%, Nb=0.01%, Ti=0.03%

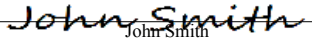
Test Notes would appear here

Welder's Name: Smith, John I.D.: 1 Stamp No.: 1

PQR was done and welding of coupon was witnessed by: Testco Contractors

Test conducted by: Kansas City Testing Lab Lab Test No.: 1L-4138

We certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Code.

Header  4/11/2013 QA Manager

John Smith

Date