### Blank Sample PQR Form (GTAW & SMAW – page 1) PROCEDURE QUALIFICATION RECORD (PQR)

Company Name				PQR No.		Rev. N	Rev. No. Date	
BASE METALS	Specification	Type or Grade	AWS Group No.	Thickness	Size (NPS	S) Schedule	Diameter	
Base Material								
Welded To								
Backing Material								
Other								
JOINT DETAILS				IOINT DET	AILS (Sketch	1		
Groove Type	T			OOM DE	AILO (ORCICII)	)		
Groove Angle				-				
				-				
Root Opening								
Root Face								
Backgouging								
Method								
POSTWELD HEAT TRE	EATMENT							
Temperature				]				
Time at Temperature				1				
Other				1				
	•							
PROCEDURE								
Weld Layer(s)								
Weld Pass(es)								
Process								
Type (Manual, Mechanize	ed, etc.)							
Position								
Vertical Progression								
Filler Metal (AWS Spec	c.)							
AWS Classification	,							
Diameter				+				
Manufacturer/Trade Na	ime	1		+				
Shielding Gas Compos.				+				
Flow Rate (GTAW)	(317117)			+				
Nozzle Size (GTAW)								
Preheat Temperature		+		+	+			
Interpass Temperature								
Electrical Characterist		_		_	_			
Electrode Diameter (G1								
Current Type & Polarity								
Amps Amps	′							
Volts								
Cold or Hot Wire Feed	(OTA)A()							
	(GTAW)							
Travel Speed  Maximum Heat Input								
Technique		_	_	_ +	_	_		
Stringer or Weave				_	-			
Multi or Single Pass (pe	er side)			+	+			
Oscillation (GTAW Mech				+	+			
Traverse Length	,			+	<del></del>			
Traverse Speed					+			
Dwell Time					+			
Peening								
Interpass Cleaning				+	+			
Other								

Form J-1 (Front)

### Blank Sample PQR Form (GMAW & FCAW – page 1) PROCEDURE QUALIFICATION RECORD (PQR)

Company Name			PQR No.		Rev. No	Rev. No. Date	
		Type or	AWS				
BASE METALS	Specification	Grade	Group No.	Thickness	Size (NPS)	Schedule	Diameter
Base Material							
Welded To							
Backing Material						•	•
Other		I	1				
JOINT DETAILS	Г			JOINT DET	TAILS (Sketch)		
Groove Type							
Groove Angle				]			
Root Opening							
Root Face							
Backgouging				]			
Method							
POSTWELD HEAT TRE	ATMENT						
Temperature				1			
Time at Temperature				1			
Other				1			
				J [			
PROCEDURE							
Weld Layer(s)							
Weld Pass(es)							
Process							
Type (Semiautomatic, Med	chanized, etc.)						
Position							
Vertical Progression							
Filler Metal (AWS Spec	:.)						
AWS Classification							
Diameter							
Manufacturer/Trade Na	me						
Shielding Gas Composit	ion						
Flow Rate							
Nozzle Size							
Preheat Temperature							
Interpass Temperature							
Electrical Characterist	ics	_	_   _	_	-		_
Current Type & Polarity	,						
Transfer Mode (GMAW)							
Power Source Type (cc,	, cv, etc.)						
Amps							
Volts							
Wire Feed Speed							
Travel Speed							
Maximum Heat Input							
Technique		_   .	_   _	_	-	-   -	<u> </u>
Stringer or Weave							
Multi or Single Pass (pe	er side)						
Oscillation (Mechanized/							
Traverse Length							
Traverse Speed							
Dwell Time							
Number of Electrodes				1			
Contact Tube to Work [	Dist.	<u> </u>					
Peening				1			
Internass Cleaning				+			

Form J-1 (Front)

Other

### Blank Sample PQR Form (SAW – page 1) PROCEDURE QUALIFICATION RECORD (PQR)

Company Name						PQR No.			— F	Rev. No.	Date
		l To	/pe or	AWS	_ ;						
BASE METALS	Specificat		Grade	Group I		Thickness	Size (I	NPS)	Sched	dule	Diameter
Base Material	i i			<u> </u>			,	,			
Welded To											
Backing Material											
Other		•		•							
JOINT DETAILS						JOINT DE	TAILS (Ske	tch)			
Groove Type							- (	,			
Groove Angle											
Root Opening											
Root Face											
Backgouging											
Method											
	ı										
POSTWELD HEAT TRE	ATMENT										
Temperature											
Time at Temperature											
Other											
PROCEDURE											
Weld Layer(s)						1	ı	ı			1
Weld Pass(es)			-								
Process		SAW				+					
Type (Semiautomatic, Med	chanized etc.)	JAW				+					+
Position	criariizeu, etc.)					+			-		
Filler Metal (AWS Spec	e.)										
AWS Classification	,					†					
Electrode Diameter								1			
Electrode/Flux Classifica	ation					1					
Manufacturer/Trade Na	ıme										
Supplemental Filler Me	etal					1					
Preheat Temperature											
Interpass Temperature											
<b>Electrical Characterist</b>		_		_	_	<u> </u>	_	-	-	_	_
Current Type & Polarity	/										
Amps											
Volts											
Wire Feed Speed											
Travel Speed											
Maximum Heat Input											
Technique		_		_	_		_	-	-	_	
Stringer or Weave											
Multi or Single Pass (pe	er side)										
Number of Electrodes								ļ			
Longitudinal Spacing of Arcs			_			-					
Lateral Spacing of Arcs Angle of Parallel Electrodes			_			+					+
Angle of Parallel Electr  Angle of Electrode (Med			-					-	-+		+
			-					-	-+		+
Normal To Direction of Travel Oscillation (Mechanized/Automatic)			-					-	-+		+
Traverse Length	лиштанс)							<b> </b>			1
Traverse Speed			_						+		+
Dwell Time			_						+		+
Peening			-					-	-+		+
Interpace Cleaning			_			+		-			+

Form J-1 (Front)

Other

### Blank Sample PQR Form (Test Results – page 2) PROCEDURE QUALIFICATION RECORD (PQR) TEST RESULTS

PQR No.	Rev. No.

#### **TESTS**

√	Type of Tests	Clause/Figure(s) Reference	Acceptance Criteria	Result	Remarks
	Visual Inspection	6.10.1	6.10.1		
	Radiographic Examination	6.10.2.1	6.10.2.2		
	Ultrasonic Testing	6.10.2.1	6.10.2.2		
	2 Transverse Root Bends	6.10.3.1/Fig. 6.8	6.10.3.3		
	2 Transverse Face Bends	6.10.3.1/Fig. 6.8	6.10.3.3		
	2 Longitudinal Root Bends	6.10.3.1/Fig. 6.8	6.10.3.3		
	2 Longitudinal Face Bends	6.10.3.1/Fig. 6.8	6.10.3.3		
	2 Side Bends	6.10.3.1/Fig. 6.9	6.10.3.3		
	4 Side Bends	6.10.3.1/Fig. 6.9	6.10.3.3		
	2 Tensile Tests	6.10.3.4/Fig. 6.10	6.10.3.5		
	All-Weld-Metal Tensions	6.10.3.6/Figs. 6.14 and 6.1 <u>6</u>	6.16.1.3(2)		
	3 Macroetch	6.10.4	6.10.4.1		
	4 Macroetch	6.10.4	6.10.4.1		
	CVN Tests	6 Part D/Fig. 6.29 – 6.31	6.31 and Table 6.16		

#### TENSILE TEST DETAILS

Specimen Number	Width	Thickness	Area	Ultimate Tensile Load	Ultimate Unit Stress	Type of Failure and Location

#### **TOUGHNESS TEST DETAILS**

Specimen Number	Notch Location	Specimen Size	Test Temperature	Absorbed Energy	Percent Shear	Lateral Expansion	Average

#### **CERTIFICATION**

Welder's Name	ID Number	Stamp Number	Tests Conducted by
			Laboratory
			Test Number
			File Number

We, the undersigned, 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 Clause 6 of AWS D1.1/D1.1M, ( ) Structural Welding Code—Steel. (year)

Title	
Name	Signature
Date	

Form J-1 (Back)

### Example PQR (GMAW & FCAW – page 1) PROCEDURE QUALIFICATION RECORD (PQR)

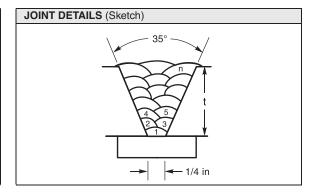
 Red Inc.
 231
 0
 01/18/2020

 Company Name
 PQR No.
 Rev. No.
 Date

BASE METALS	Specification	Type or Grade	AWS Group No.	Thickness	Size (NPS)	Schedule	Diameter
Base Material	ASTM A131	Α	I	1 in	_	-	_
Welded To	ASTM A131	Α	I	1 in	_	-	_
Backing Material	ASTM A131	Α	I	1/4 in			
Other					•		

JOINT DETAILS	
Groove Type	Single V Groove Butt Joint
Groove Angle	35° included
Root Opening	1/4 in
Root Face	_
Backgouging	None
Method	-

POSTWELD HEAT TREATMENT				
Temperature	_			
Time at Temperature	_			
Other	_			



PROCEDURE								
Weld Layer(s)	_	_	_	_	_			
Weld Pass(es)	1	2–8	9–11	12–15	16			
Process	FCAW	FCAW	FCAW	FCAW	FCAW			
Туре	Semi-	Semi-	Semi-	Semi-	Semi-			
(Semiautomatic, Mechanized, etc.)	automatic	automatic	automatic	automatic	automatic			
Position	4G	4G	4G	4G	4G			
Vertical Progression	_	-	-	_	_			
Filler Metal (AWS Spec.)	A5.20	A5.20	A5.20	A5.20	A5.20			
AWS Classification	E71T-1C	E71T-1C	E71T-1C	E71T-1C	E71T-1C			
Diameter	0.045 in							
Manufacturer/Trade Name	_	_	-	_	_			
Shielding Gas Composition	100% CO <sub>2</sub>							
Flow Rate	45–55 cfh	45–55 cfh	45-55 cfh	45–55 cfh	45–55 cfh			
Nozzle Size	#4	#4	#4	#4	#4			
Preheat Temperature	75° min.							
Interpass Temperature	75°–350°	75°–350°	75°–350°	75°–350°	75°–350°			
Electrical Characteristics	_	_	_	_	_	_	_	_
Current Type & Polarity	DCEP	DCEP	DCEP	DCEP	DCEP			
Transfer Mode (GMAW)	_	_	_	_	_			
Power Source Type (cc, cv, etc.)	_	_	_	_	_			
Amps	180	200	200	200	200			
Volts	26	27	27	27	27			
Wire Feed Speed	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)			
Travel Speed	8 ipm	10 ipm	11 ipm	9 ipm	11 ipm			
Maximum Heat Input	_	-	-	_	_			
Technique	_	_	_	_	_		_	
Stringer or Weave	Stringer	Stringer	Stringer	Stringer	Stringer			
Multi or Single Pass (per side)	Multipass	Multipass	Multipass	Multipass	Multipass			
Oscillation (Mechanized/Automatic)	_	_	_	_	_			
Number of Electrodes	1	1	1	1	1			
Contact Tube to Work Dist.	3/4-1 in	3/4–1 in	3/4–1 in	3/4–1 in	3/4-1 in			
Peening	None	None	None	None	None			
Interpass Cleaning	Wire Brush							
Other								

Form J-1 (Front)

## Example PQR (GMAW & FCAW – page 2) PROCEDURE QUALIFICATION RECORD (PQR) TEST RESULTS

 $\frac{231}{\text{PQR No.}} \frac{0}{\text{Rev. No.}}$ 

#### **TESTS**

	Type of Tests	Clause/Figure(s) Reference	Acceptance Criteria	Result	Remarks
V	Visual Inspection	6.10.1	6.10.1	Acceptable	
V	Radiographic Examination	6.10.2.1	6.10.2.2	Acceptable	
	Ultrasonic Testing	6.10.2.1	6.10.2.2		
	2 Transverse Root Bends	6.10.3.1/Fig. 6.8	6.10.3.3		
	2 Transverse Face Bends	6.10.3.1/Fig. 6.8	6.10.3.3		
	2 Longitudinal Root Bends	6.10.3.1/Fig. 6.8	6.10.3.3		
	2 Longitudinal Face Bends	6.10.3.1/Fig. 6.8	6.10.3.3		
	2 Side Bends	6.10.3.1/Fig. 6.9	6.10.3.3		
<b>√</b>	4 Side Bends	6.10.3.1/Fig. 6.9	6.10.3.3	Acceptable	< 1/16 in Opening
<b>V</b>	2 Tensile Tests	6.10.3.1/Fig. 6.10	6.10.3.5	Acceptable	
	All-Weld-Metal Tensions	6.10.3.1/Figs. 6.14 and 6.16	6.15.3(2)	Acceptable	*See Note
	3 Macroetch	6.10.4	6.10.4.1		
	4 Macroetch	6.10.4	6.10.4.1		
	CVN Tests	6 Part D/Fig 6.2 <u>7</u>	6.29 and Table 6.16		

#### TENSILE TEST DETAILS

Specimen Number	Width	Thickness	Area	Ultimate Tensile Load	Ultimate Unit Stress	Type of Failure and Location
231-1	0.75 in	100 in	0.75 in <sup>2</sup>	52 500 lb	70 000 psi	Ductile/Weld Metal
231-2	0.75 in	100 in	0.75 in <sup>2</sup>	52 275 lb	69 700 psi	Ductile/Weld Metal

#### **TOUGHNESS TEST DETAILS**

Average	Lateral Expansion	Percent Shear	Absorbed Energy	Test Temperature	Specimen Size	Notch Location	Specimen Number
	45 mils	50%	126 ft·lbf	−20 °F	10 × 10 mm	BM	231-7
]	45 mils	50%	124 ft·lbf	−20 °F	10 × 10 mm	BM	231-8
125/50/45	45 mils	50%	125 ft·lbf	–20 °F	10 × 10 mm	BM	231-9
1							
	45 mils	50%	86 ft·lbf	−20 °F	10 × 10 mm	HAZ	231-10
85 ft·lbf	45 mils	50%	84 ft·lbf	−20 °F	10 × 10 mm	HAZ	231-11
50%	45 mils	50%	85 ft·lbf	–20 °F	10 × 10 mm	HAZ	231-12
45 mils							
	45 mils	50%	27 ft·lbf	–20 °F	10 × 10 mm	WM	231-13
28 ft·lbf	45 mils	50%	29 ft·lbf	−20 °F	10 × 10 mm	WM	231-14
50% 45 mils	45 mils	50%	28 ft·lbf	–20 °F	10 × 10 mm	WM	231-14
1							

### CERTIFICATION

Welder's Name	ID Number	Stamp Number
W. T. Williams	261	_

Tests Conducted by	
Laboratory	Red Inc. & ABC Testing
Test Number	PQR 231 (per D. Miller)
File Number	WeldingForms/PQR231.pdf

We, the undersigned, 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 Clause 6 of AWS D1.1/D1.1M, ( ) Structural Welding Code—Steel.

Title	
Q.C. Mgr.	
Name	Signature
R. M. Boncrack	
Date	
12/15/2020	

Form J-1 (Back)

### Blank Sample WPS Form (GTAW & SMAW) WELDING PROCEDURE SPECIFICATION (WPS)

Company Name					WPS No.			Rev. No.	Date
Authorized by				Date	Supporting	PQR(s)		CVN	Report
BASE METALS	Specification	Type Grad		AWS oup No.	BASE MET		As-We	elded V	Vith PWHT
Base Material					CJP Groov	e Welds			
Welded To					CJP Groov	e w/CVN			
Backing Material					PJP Groov	e Welds			
Other					Fillet Welds	S			
					DIAMETER	3			
JOINT DETAILS					JOINT DE	TAILS (Sket	tch)		
Groove Type						,	,		
Groove Angle									
Root Opening									
Root Face									
Backgouging									
Method									
	!								
POSTWELD HEAT TRE	ATMENT								
Temperature									
Time at Temperature									
Other									
PROCEDURE									
Weld Layer(s)		I							
Weld Pass(es)									
Process									
Type (Manual, Mechanize	ed, etc.)								
Position	. ,								
Vertical Progression									
Filler Metal (AWS Spec	c.)								
AWS Classification	,								
Diameter									
Manufacturer/Trade Na	ıme								
Shielding Gas Compos.	(GTAW)								
Flow Rate (GTAW)	,								
Nozzle Size (GTAW)									
Preheat Temperature									
Interpass Temperature									
<b>Electrical Characterist</b>		_	_	_	_	_	_	_	_
Electrode Diameter (G	TAW)								
Current Type & Polarity	/								
Amps									
Volts									
Cold or Hot Wire Feed	(GTAW)								
Travel Speed	, ,								
Maximum Heat Input									
Technique		_		_	_	_	_	_	_
Stringer or Weave									
Multi or Single Pass (pe	er side)			1					
Oscillation (GTAW Mech				1					
Traverse Length									
Traverse Speed					1				
Dwell Time									1
Peening									1
Interpass Cleaning					1				1
Other					+				

Form J-2

### Blank Sample WPS Form (GMAW & FCAW) WELDING PROCEDURE SPECIFICATION (WPS)

Company Name						WPS No.			Rev. No.	Date
Authorized by				Date		Supporting	PQR(s)		CVI	N Report
		Тур	e or	AWS		BASE MET	ΓAL			
BASE METALS	Specificat		ade	Group No	).	THICKNES	SS	As-We	elded	With PWHT
Base Material				•		CJP Groov	e Welds			
Welded To						CJP Groov	e w/CVN			
Backing Material			1			PJP Groov				
Other	1	ı				Fillet Welds				
						DIAMETER				
<u> </u>						51711112121	•			
JOINT DETAILS						JOINT DE	TAILS (Ske	tch)		
Groove Type										
Groove Angle										
Root Opening										
Root Face										
Backgouging										
Method										
POSTWELD HEAT TRE	ATMENT									
Temperature										
Time at Temperature										
Other										
PROCEDURE										
Weld Layer(s)										
Weld Pass(es)										
Process										
Type (Semiautomatic, Med	chanized, etc.)									
Position	•									
Vertical Progression										
Filler Metal (AWS Spec	:.)									
AWS Classification	,									
Diameter										
Manufacturer/Trade Na	me									
Shielding Gas (Composi										
Flow Rate	,									
Nozzle Size			<del> </del>							
Preheat Temperature										
Interpass Temperature										
Electrical Characteristi	ice		<u> </u>	_	_	_	_	_		<del> </del>
Current Type & Polarity										
Transfer Mode										
Power Source Type (cc,	cv. etc.)			<del>-  </del>					<b>-</b>	+
Amps	( CV, C10.)			<del>-  </del>					<b>-</b>	+
Volts				<del>-  </del>					<b>-</b>	+
Wire Feed Speed			+							
Travel Speed			-							+
Maximum Heat Input			-							+
Technique			-							+
Stringer or Weave			<del>                                       </del>	_	_		_	_	<del>-</del> -	+
	!-!-\		-						ļ	_
Multi or Single Pass (pe			+							-
Oscillation (Mechanized/	Automatic)		<u> </u>							+
Traverse Length			1							
Traverse Speed			1							
Dwell Time			<u> </u>							
Number of Electrodes			1							
Contact Tube to Work D	Distance									
Peening										
Interpass Cleaning										
Other										

Form J-2

### Blank Sample WPS Form (SAW) WELDING PROCEDURE SPECIFICATION (WPS)

Company Name						WPS No.			Rev. No	<del></del>	Date
Authorized by				Date		Supporting	PQR(s)		C	VN Re	eport
BASE METALS	Specificat	Ту <sub>г</sub> ion Gı	oe or rade	AWS Group No.		BASE MET	SS	As-We	elded	With	h PWHT
Base Material						CJP Groov	e Welds				
Welded To						CJP Groov	e w/CVN				
Backing Material						PJP Groov	e Welds				
Other					_	Fillet Weld					
						DIAMETE					
					_		-		<u> </u>		
IONT DETAIL O						IONE DE	TAIL 0 (0)	1 - 1 - 1			
JOINT DETAILS	1					JOINT DE	TAILS (Ske	icn)			
Groove Type					_						
Groove Angle					_						
Root Opening											
Root Face											
Backgouging											
Method											
POSTWELD HEAT TRE	EATMENT										
Temperature											
Time at Temperature											
Other					-						
Cirio					_						
PROCEDURE											
Weld Layer(s)											
Weld Pass(es)											
Process		SAW									
Type (Semiautomatic, Me	chanized, etc.)									$\neg$	
Position	, ,									$\dashv$	
Filler Metal (AWS Spec	c.)									$\dashv$	
AWS Classification	,									$\dashv$	
Electrode Diameter										+	
Electrode/Flux Classific	ation									+	
Manufacturer/Trade Na			+							+	
Supplemental Filler Me										+	
	etai		+							+	
Preheat Temperature										$\dashv$	
Interpass Temperature											
Electrical Characterist			_			_	_	_	_	$\perp$	
Current Type & Polarity	У										
Amps										$\perp \perp$	
Volts											
Wire Feed Speed											
Travel Speed											
Maximum Heat Input											
Technique		_	_	_		_	_	_	_		_
Stringer or Weave											
Multi or Single Pass (p	er side)										
Number of Electrodes										$\neg$	
Longitudinal Spacing of	of Arcs									$\dashv$	
Lateral Spacing of Arc										$\dashv$	
Angle of Parallel Electr			+			1			<b>†</b>	+	
Angle of Electrode (Me			+			1				+	
Normal To Direction of	of Travel		+			+			<u> </u>	+	
Oscillation (Mechanized			+			1			-	+	
	vAutomatic)		+			1				+	
Traverse Length			1			-				$\dashv$	
Traverse Speed			1			ļ				$\perp$	
Dwell Time						ļ					
Peening			1								
Interpass Cleaning			1							$\perp \perp$	

Form J-2

## Example WPS (Prequalified) WELDING PROCEDURE SPECIFICATION (WPS)

LECO	
Company Name	
B. W. Hayes	01/03/2015
Authorized by	Date

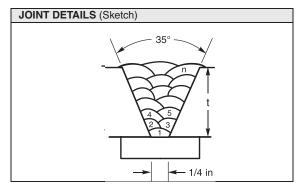
W2081	2	01/03/2020
WPS No.	Rev. No.	Date
None (Prequalified)	N	0
Supporting PQR(s)	CVN F	Report

BASE METALS	Specification	Type or Grade	AWS Group No.
Base Material	ASTM A36	-	II
Welded To	ASTM A36	_	II
Backing Material	ASTM A36	-	-
Other			

BASE METAL THICKNESS	As-Welded	With PWHT
CJP Groove Welds	> 3/4–2.5 in	_
CJP Groove w/CVN	-	_
PJP Groove Welds	-	_
Fillet Welds	_	_
DIAMETER	_	_

JOINT DETAILS	
Groove Type	Single V Groove Butt Joint
Groove Angle	20°
Root Opening	5/8 in
Root Face	_
Backgouging	None
Method	_

POSTWELD HEAT TREATMENT			
Temperature	N.A.		
Time at Temperature	_		
Other	_		



PROCEDURE								
Weld Layer(s)	All		I	I		I	I	
Weld Pass(es)	All							
Process	SAW							
Type (Semiautomatic, Mechanized, etc.)	Mechanized							
Position	F							
Filler Metal (AWS Spec.)	A5.17							
AWS Classification	EM12K							
Electrode Diameter	5/32 in							
Electrode/Flux Classification	F7A2-EM12K							
Manufacturer/Trade Name	(Flux XYZ)							
Supplemental Filler Metal	_							
Preheat Temperature	150°F min.							
Interpass Temperature	500°F max.							
Electrical Characteristics	_	_	_	_	_	_	_	_
Current Type & Polarity	DCEP							
Amps	500-600							
Volts	26–30							
Wire Feed Speed	-							
Travel Speed	20–25 ipm							
Maximum Heat Input	-							
Technique	_	_	_	_	_	_	_	_
Stringer or Weave	Stringer							
Multi or Single Pass (per side)	Multipass							
Number of Electrodes	1							
Longitudinal Spacing of Arcs								
Lateral Spacing of Arcs	_							
Angle of Parallel Electrodes	_							
Angle of Electrode (Mech./Auto.)	5° ± 2°							
Normal To Direction of Travel	90° ± 2°							
Oscillation (Mechanized/Automatic)	None							
Traverse Length	_							
Traverse Speed	_							
Dwell Time	_							
Peening	None							
Interpass Cleaning	Slag Removed							
Other	_							

Form J-2

## Example WPS (Single-Process) WELDING PROCEDURE SPECIFICATION (WPS)

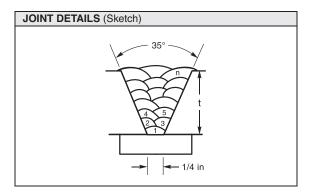
RED Inc.		2010	0	12/01/2020
Company Name	·	WPS No.	Rev. No.	Date
J. Jones	12/01/2015	231		No
Authorized by	Date	Supporting PQR(s)	CVN	Report

BASE METALS	Specification	Type or Grade	AWS Group No.
Base Material	ASTM A131	Α	I
Welded To	ASTM A131	A	I
Backing Material	ASTM A131	A	I
Other			

BASE METAL THICKNESS	As-Welded	With PWHT
CJP Groove Welds	3/4-1-1/2 in	-
CJP Groove w/CVN	_	_
PJP Groove Welds	_	_
Fillet Welds	_	_
DIAMETER	_	_

JOINT DETAILS	
Groove Type	Single V Groove Butt Joint
Groove Angle	35° included
Root Opening	1/4 in
Root Face	_
Backgouging	None
Method	_

POSTWELD HEAT TREATMENT				
Temperature	None			
Time at Temperature	_			
Other	_			



PROCEDURE	PROCEDURE							
Weld Layer(s)	All							
Weld Pass(es)	All							
Process	FCAW							
Type (Semiautomatic, Mechanized, etc.)	Semiauto							
Position	OH							
Vertical Progression	-							
Filler Metal (AWS Spec.)	A5.20							
AWS Classification	E71T-1C							
Diameter	0.045 in							
Manufacturer/Trade Name	_							
Shielding Gas (Composition)	100% CO <sub>2</sub>							
Flow Rate	45–55 cfh							
Nozzle Size	#4							
Preheat Temperature	60° min.							
Interpass Temperature	60°–350°							
Electrical Characteristics	_							
Current Type & Polarity	DCEP							
Transfer Mode	_							
Power Source Type (cc, cv, etc.)	CV							
Amps	180–220							
Volts	25–26							
Wire Feed Speed	(Amps)							
Travel Speed	8–12 ipm							
Maximum Heat Input	-							
Technique	_							
Stringer or Weave	Stringer							
Multi or Single Pass (per side)	Multipass							
Oscillation (Mechanized, Automatic)	_							
Number of Electrodes	1							
Contact Tube to Work Dist.	1/2–1 in							
Peening	None							
Interpass Cleaning	Wire Brush							
Other	_							

Form J-2

### WPS QUALIFICATION TEST RECORD FOR ELECTROSLAG AND ELECTROGAS WELDING

#### PROCEDURE SPECIFICATION **TEST RESULTS** Material specification \_\_\_\_\_ Reduced-section tensile test Welding process \_\_\_\_\_ Tensile strength, psi Position of welding \_\_\_\_\_ Filler metal specification \_\_\_\_\_ Filler metal classification \_\_\_\_\_ Filler metal \_\_\_\_\_ Flux \_\_\_\_\_ Shielding gas \_\_\_\_\_ Flow rate \_\_\_\_ All-weld-metal tension test Gas dew point \_\_\_\_\_ Tensile strength, psi \_\_\_\_ Thickness range this test qualifies \_\_\_\_\_ Yield point/strength, psi Single or multiple pass \_\_\_\_\_ Elongation in 2 in, % Single or multiple arc\_\_\_\_\_ Welding current\_\_\_\_\_ Preheat temperature Postheat temperature \_\_\_\_\_ Side-bend tests Welder's name \_\_\_\_\_ 1. \_\_\_\_\_\_ 3. \_\_\_\_ Guide tube flex \_\_\_\_\_\_ 2. \_\_\_\_\_ 4. \_\_\_\_ Guide tube composition \_\_\_\_\_ Guide tube diameter \_\_\_\_\_ Vertical rise speed\_\_\_\_\_ Traverse length \_\_\_\_\_ Radiographic-ultrasonic examination Traverse speed \_\_\_\_\_ RT report no. Dwell \_\_\_\_\_ UT report no. Type of molding shoe \_\_\_\_\_ VISUAL INSPECTION (Table 8.1, Cyclically loaded limitations) Impact tests Appearance\_\_\_\_\_ Size of specimen \_\_\_\_\_ Test temp \_\_\_ ft·lbf: 1. \_\_\_\_\_ 2. \_\_\_\_ 3. \_\_\_\_ 4. \_\_\_\_ Undercut \_\_\_\_\_ Piping porosity \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_ Avg.\_\_\_\_ Test date \_\_\_\_\_ High \_\_\_\_\_ Low \_\_\_\_ Witnessed by\_\_\_\_\_ Laboratory test no. \_\_\_\_\_ WELDING PROCEDURE Welding Current Pass Electrode Amperes Size Volts Joint Detail No. We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in conformance with the requirements of Clause 6 of AWS D1.1/D1.1M, (\_\_\_\_\_\_\_) Structural Welding Code—Steel. (year) Procedure no. \_\_\_\_\_ Manufacturer or Contractor \_\_\_\_\_ Revision no.\_\_\_ Authorized by \_\_\_\_\_ Form J-3 Date \_\_

# Sample Welder Qualification Blank Form (Single-Process) WELDER, WELDING OPERATOR, OR TACK WELDER PERFORMANCE QUALIFICATION TEST RECORD

Nicon				П	T	\			
Name			_	]	Test D				Rev.
ID Number			OPTIO	NIAI	Recor	-			
Stamp No.			PHOTO	חו כ		est No.			
Company					WPS	_			
Division					Qualif	ied To			
BASE METALS	Specification	Type or Grade	AWS Group No.	Size (N	JPS)	Schedule	Thic	kness	Diameter
Base Material	opodinoation.	Grado	Group Ho.	0.20 (1	11 0)	Corrodato	11110	111000	Diamotor
Welded To									
		1					ı		
VARIABLES		Actu	ıal Values			RA	NGF C	UALIFIE	D
Type of Weld Joint		7.1010							
Base Metal									
	I								
		Groove	Fill	et		Groove			Fillet
Plate Thickness		C 5010				3,000			
Pipe/Tube Thickness									
Pipe Diameter									
1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	<u> </u>								
Welding Process									
Type (Manual, Semiautom	natic,								
Mechanized, Automatic)									
Backing Filler Metal (AWS Spec	1								
AWS Classification	.,								
F-Number									
Position									
Groove – Plate & Pipe	> 24 in				++				
Groove – Pipe < 24 in	2 24 111								
Fillet – Plate & Pipe ≥ 2	4 in								
Fillet – Pipe < 24 in	7 111								
Progression									
GMAW Transfer Mode									
Single or Multiple Electro	odes								
Gas/Flux Type									
, , , , , , , , , , , , , , , , , , ,	I								
TEST RESULTS									
To a state of				ceptance		D II.		D	4
Type of Test			(	Criteria		Results		Remar	rks
					-				
<u> </u>			<u> </u>			J			
CERTIFICATION									
Test Conducted by									
Laboratory									
Test Number									
File Number									
We, the undersigned, cer accordance with the requi	tify that the staten irements of Clause	nents in this red e <u>6</u> of AWS D1.	1/D1.1M (	and that ) <i>Struc</i> ear)	the tes	st welds were p Velding Code—	repare Steel.	d, welded	d, and tested in
Manufacturer or Contractor	or		Αι	thorized b	у				
				-					

Form J-4

## Example Welder Qualification (Single-Process) WELDER, WELDING OPERATOR, OR TACK WELDER PERFORMANCE QUALIFICATION TEST RECORD

Name	Z. W. Elder		Test Date	12/12/2020	Rev.
ID Number	00-001-ZWE	OPTIONAL	Record No.	WPQ-001	0
Stamp No.	ZWE-1	PHOTO ID	Std. Test No.	ST-001	0
Company	RED Inc.	11101010	WPS No.	WPS-001	0
Division	_		Qualified To	AWS D1.1	

BASE METALS	Specification	Type or Grade	AWS Group No.	Size (NPS)	Schedule	Thickness	Diameter
Base Material	ASTM A36	UNS K02600	I	_	_	3/8 in	_
Welded To	ASTM A36	UNS K02600	I	-	_	3/8 in	_

VARIABLES Actual Values			RANGE QUALIFIED
Type of Weld Joint	Plate – Groove (Fig. 6.20) with Backing		Groove, Fillet, Plug, and Slot Welds (T-, Y-, K-Groove PJP only)
Base Metal	Group I to Group I		Any AWS D1.1 Qualified Base Metal

	Groove	Fillet	Groove	Fillet
Plate Thickness	3/8 in	-	1/8 in – 3/4 in	1/8 in min.
Pipe/Tube Thickness	_	-	1/8 in – 3/4 in	Unlimited
Pipe Diameter	_	-	24 in min.	Unlimited

Welding Process	GMAW	GMAW
Type (Manual, Semiautomatic, Mechanized, Automatic)	Semiautomatic	Semiautomatic, Mechanized, Automatic
Backing	With	With (incl. Backgouging and Backwelding)
Filler Metal (AWS Spec.)	A5.18	A5.xx
AWS Classification	ER70S-6	All
F-Number	_	-
Position	2G, 3G, and 4G	
Groove - Plate and Pipe ≥ 24 in		All
Groove – Pipe < 24 in		-
Fillet – Plate and Pipe ≥ 24 in		All
Fillet – Pipe < 24 in		All
Progression	Vertical Up	Vertical Up
GMAW Transfer Mode	Globular	Spray, Pulsed, Globular
Single or Multiple Electrodes	Single	Single
Gas/Flux Type	A5.32 SG-C	A5.xx Approved

### TEST RESULTS

Type of Test	Acceptance Criteria	Results	Remarks
Visual Examination per 6.10.1	6.10.1	Acceptable	-
Each Position: 1 Root Bend per 6.10.3.1 and Fig. 6.8	6.10.3.3	Acceptable	_
Each Position: 1 Face Bend per 6.10.3.1 and Fig. 6.8	6.10.3.3	Acceptable	3G: Small (<1/16 in) Opening

### CERTIFICATION

Test Conducted by	
Laboratory	Welding Forms Lab
Test Number	Fictitious Test XYZ
File Number	Welding Forms/Sample-WPQ-for-GMAW.pdf

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested	ni b
accordance with the requirements of Clause 6 of AWS D1.1/D1.1M () Structural Welding Code—Steel.	
(voor)	

Manufacturer or Contractor	Red Inc.	Authorized by	E. M. Ployee (Q.C. Mgr.)
		Date	12/12/2020

Form J-4

# Sample Welder Qualification Blank Form (Multi-Process) WELDER, WELDING OPERATOR, OR TACK WELDER PERFORMANCE QUALIFICATION TEST RECORD

Name						Test D				Rev.
ID Number				OPTION	ΙΔΙ	Recor	-			
Stamp No.				PHOTO			est No.			
Company					WPS No.					
Division						Qualif	ied To			
DAGE METALO	0	Туре		AWS	0:	NIDO)	0 -11- 1 -	This		D'
BASE METALS	Specification	on Gra	ae (	Group No.	Size (	NPS)	Schedule	Inic	kness	Diameter
Base Material								-		
Welded To	ļ							ļ		
VADIADI 50			A				5.4	NOFO		<b>5</b>
VARIABLES			Actual V	/aiues			K/	ANGE Q	UALIFIE	D
Type of Weld Joint Base Metal										
base ivietal										
		Groove	;	Fille	et		Groove			Fillet
Plate Thickness										
Pipe/Tube Thickness										
Pipe Diameter										
Welding Process										
Type (Manual, Semiauton	natic,									
Mechanized, Automatic)										
Backing	,									
Filler Metal (AWS Spec	:.)									
AWS Classification										
F-Number										
Position	0.4.:					$\perp$				
Groove – Plate and Pip	e ≥ 24 in									
Groove – Pipe < 24 in	04:									
Fillet – Plate and Pipe	≥ 24 In									
Fillet – Pipe < 24 in										
Progression										
GMAW Transfer Mode										
Single or Multiple Electro	odes									
Gas/Flux Type										
TEST RESULTS										
TLST NLSULIS										
Type of Test					eptance riteria		Results		Remai	rks
71										
							+			
				I		1				
CERTIFICATION										
Test Conducted by										
Laboratory										
Test Number										
File Number										
We, the undersigned, cer	rtify that the st	atamants in t	hie record	are correct	and that	the tes	t walde wara r	renare	d waldar	d and tested in
accordance with the requ	irements of Cl	ause 6 of AW	'S D1.1/D	1.1M (	) Stru	ctural V	Veldina Code-	-Steel.	a, woluce	a, and tooted if
				(year	,					
Manufacturer or Contract	or			_ Au	thorized	by				
				Da	te					
				Δα						

Form J-5

# Example Welder Qualification (Multi-Process) WELDER, WELDING OPERATOR, OR TACK WELDER PERFORMANCE QUALIFICATION TEST RECORD

Name	Z. W. Elder		Test Date	12/12/2020	Rev.
ID Number	00-001-ZWE	OPTIONAL	Record No.	WPQ-003	0
Stamp No.	ZWE-01	PHOTO ID	Std. Test No.	ST-003	0
Company	RED Inc.	11101015	WPS No.	WPS-003	0
Division	_		Qualified To	AWS D1.1	

BASE METALS	Specification	Type or Grade	AWS Group No.	Size (NPS)	Schedule	Thickness	Diameter
Base Material	ASTM A36	UNS K02600	II	_	_	1 in	-
Welded To	ASTM A36	UNS K02600	II	_	_	1 in	_

VARIABLES	Actual Values	RANGE QUALIFIED
Type of Weld Joint	Plate – Groove (Fig. 6.20) with Backing	Groove, Fillet, Plug, and Slot Welds (T-, Y-, K-Groove PJP only)
Base Metal	Group II to Group II	Any AWS D1.1 Qualified Base Metal

	Groove	Fillet	Groove	Fillet
Plate Thickness	1 in	-	1/8 in min.	1/8 in min.
Pipe/Tube Thickness	_	-	1/8 in min.	Unlimited
Pipe Diameter	_	-	24 in min.	Unlimited

Welding Process	GTAW	SMAW	FCAW	GTAW	SMAW	FCAW
Type (Manual, Semiautomatic, Mechanized, Automatic)	Manual	Manual	Semiauto	Man/Mech/ Auto	Manual	Semi/Mech/ Auto
Backing	With	With	With	With	With	With
Filler Metal (AWS Spec.)	A5.18	A5.1	A5.20	A5.xx	A5.xx	A5.xx
AWS Classification	ER70S-2	E7018	E70T-6	All	All	All
F-Number	_	4	_	_	1 thru 4	-
Position	1G	1G	1G			
Groove – Plate and Pipe ≥ 24 in				F	F	F
Groove – Pipe < 24 in				_	_	-
Fillet – Plate and Pipe ≥ 24 in				F, H	F, H	F, H
Fillet – Pipe < 24 in				F, H	F, H	F, H
Progression	_	_	_	_	_	_
GMAW Transfer Mode	_	_	_	_	_	_
Single or Multiple Electrodes	Single	_	Single	Single	_	Single
Gas/Flux Type	A5.32 SG-A	-	None	A5.xx Approved	-	A5.xx Approved

#### TEST RESULTS

Type of Test	Acceptance Criteria	Results	Remarks
Visual Examination per 6.10.1	6.10.1	Acceptable	_
2 Transverse Side Bends per 6.10.3.1 and Fig. 6.9	6.10.3.3	Acceptable	-

### CERTIFICATION

Test Conducted by	
Laboratory	Welding Forms Lab
Test Number	Fictitious Test XYZ
File Number	Welding Forms/Sample-WPQ-for-GTAW-SMAW-FCAW.pdf

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared,	welded,	and tes	sted in
conformance with the requirements of Clause 6 of AWS D1.1/D1.1M () Structural Welding Code—Steel.			
(year)			

Manufacturer or Contractor	Red Inc.	Authorized by	E. M. Ployee (Q.C. Mgr.)
		Date	12/12/2020

Form J-5

### REPORT OF RADIOGRAPHIC EXAMINATION OF WELDS

Quality re	equirements— <u>Clause</u> No.						-			
·		WELD LO	CATION AI	ND IDENT	IFICATION	SKETCH				
					Tecl	hnique				
	Source									
					Film	tyne				
						турс				
	(Descr	ribe length	, width, and	d thickness	of all joint	s radiograp	ohed)			
			Interpr	retation	Rep	oairs				
Date	Weld identification	Area	Accept.	Reject	Accept.	Reject	Remarks			
We, the u	undersigned, certify that the ance with the requirements of	statemen of AWS D1	ts in this red	cord are co	orrect and th	nat the test Iral Welding	welds were prepared and tested ir Code—Steel.			
Radiogra	apher(s)			_ Ma	anufacturer	or Contrac	etor			
Interpreter					Authorized by					
	)				Date					
Form J-6			(See http:	://go.aws.org/l	O1forms)					

### REPORT OF MAGNETIC-PARTICLE EXAMINATION OF WELDS

Project									
-	equirements— <u>Clause</u> d to								
		WELD	LOCATIO	N AND ID	ENTIFICAT	TION SKET	ГСН		
	Quantity: _		_ Total Ac	cepted: _		_ Total Re	jected:		
		Area E	xamined	Interpr	etation	Rep	airs		
Date	Weld identification	Entire	Specific	Accept.	Reject	Accept.	Reject	Remarks	
225 514									
	AMINATION Preparation:								
	-							·	
EQUIPM Instrume	<u>//=/v /</u> ent Make:				Model:			R. No.:	
	D OF INSPECTION				_				
<u></u>	☐ Dry How Media			Visik	ole	Fluores	cent		
	Residual AC		Continuous		-Continuou -Wave	ıs			
	Prods	=	oke (			Other_			
Direction	for Field:		Circular	Long	gitudinal				
Strength	of Field:								
DOCT F	·	Ampere tur	ns, field den	sity, magnet	izing force, i	number, and	duration of	force application.)	
	<u>XAMINATION</u> etizing Technique (if re	eauired):							
_	(if required):								
We, the ι		at the state	ments in th	is record a	re correct a		test welds	were prepared and tested ir	
Inspecto	r				(year)  Manufacturer or Contractor				
	e					-			

(See http://go.aws.org/D1forms)

Form <u>J</u>-7

OR PROCEI	TION TEST PER SUBC	T DATA FORM PER SUI CLAUSE 9.7.1 (WPS) Y N RECORD (PQR) Yes RECORD (WQR) Yes	es 🗆
Company name			
Operator name			
Test number			
Weld stud material			
Weld stud size and PN#/Manufacturer			
Base Material		Stud Base Sketch/	Application Detail
Specification	_		Application Dotain
Alloy and temper			
Surface condition HR  CR			
Coating			
Cleaning method			
Decking gage			
Shape of Base Material			
Flat Round Tube Angle Inside Inside Inside	e radius		
Thickness			
Ferrule			
Part No./Manufacturer			
Ferrule description			
Equipment Data			
Application Settings, Current, and Tir	me Settings		
Make Model	=		
Stud gun: Make Model			
Weld time (seconds)	21		
Current (amperage)			
Lift			
Plunge (protrusion)	<del></del>		
Weld cable size Length			
Number of grounds (workpiece leads) _			
Welding Position			
Flat (Down hand) Horizontal (Side h	nand) 🔲 Angular—degre	ees from normal 🔃 Overh	ead
Shielding Gas			
Shielding gas(es)/Composition			
Flow rate			
	WELD TEST RE	SIIITS	
Charl Na Missal Assauts			O-4 #0 T T+*
Stud No. Visual Acceptance	Option #1 Bend Test	Option #2 Tension Test	Option #3 Torque Test*
2			
3			
4			
5			
6			
7			
8			
9			
10			
*Note: Torque test optional for threaded fasten	•		
Mechanical tests conducted by			Date
	(Company)		
We, the undersigned, certify that the state tested in conformance with the requirement		.1/D1.1M, () Str	
Olemand Inc.	<u> </u>	(year)	Date
Signed by(Contractor/Applicator/C	Ti	TIE	Date
Form <u>J</u> -8		ompany	
· -···· <u>-</u> •	(See http://go.aws.org/		