

QW-483 SUGGESTED FORMAT FOR PROCEDURE QUALIFICATION RECORDS (PQR)

(See QW-200.2, Section IX, ASME Boiler and Pressure Vessel Code)

Record Actual Conditions Used to Weld Test Coupon

Company Name _____

Procedure Qualification Record No. 01A09 Date 11-19-2012

WPS No. _____ 01A09 Rev 0

Welding Process (es) SMAW

Types (Manual, Automatic, Semi-Automatic) _____ Manual

JOINTS (QW-402)

Groove Design of Test Coupon (sketch, figure or reference)

(For combination qualifications, the deposited weld metal thickness shall be recorded for each filler metal and process used.)

BASE METALS (QW-403)

Material Specification AISI4131 to SA-487 GR A

Type or Grade or UNS Number _____

P No. _____ Group No. _____ to P No. 3 Group No3

Thickness of Test Coupon .432

Diameter of Test Coupon 6.625

Maximum Pass Thickness .200

Other _____

POST WELD HEAT TREATMENT (QW-407)

Temperature None

Time _____

Other _____

FILLER METALS (QW-404)

	1	2	3
Layer (combination welds)	<u>5.5</u>	_____	_____
SFA Specification	<u>E10018-D2</u>	_____	_____
AWS Classification	<u>3</u>	_____	_____
Filler Metal F No.	<u>1</u>	_____	_____
Weld Metal Analysis A No.	<u>3/32</u>	_____	_____
Size of Filler Metal	_____	_____	_____
Filer Metal Product Form	<u>None</u>	<u>None</u>	_____
Supplemental Filler Metal	<u>n/a</u>	_____	_____
Electrode Flux Classification	<u>n/a</u>	_____	_____
Flux Type	<u>n/a</u>	_____	_____
Flux Trade Name	<u>.125</u>	<u>.307</u>	_____
Weld Metal Thickness	_____	_____	_____
Other	_____	_____	_____

GAS (QW-408)

	Gas (es)	Percent Composition (Mixture)	Flow Rate
Shielding	_____	_____	_____
Trailing	_____	_____	_____
Backing	_____	_____	_____
Other	_____	_____	_____

ELECTRICAL CHARACTERISTICS (QW-409)

Current (1) DCEP

Polarity Reverse

Amps (1) 70 (2) 130 Volts 18-26

Tungsten Electrode Size _____

Transfer Mode for GMAW (FCAW) _____

Other _____

POSITION (QW-405)

Position of Groove 6G

Weld Progression (Uphill, Downhill) uphill

Other _____

TECHNIQUE (QW-410)

Travel Speed var

String or Weave Bead String and Weave

Oscillation _____

Multipass or Singles Pass (per side) Multiple

Single or Multiple Electrodes Single

Other _____

PREHEAT (QW-406)

Preheat Temperature 55°F

Interpass Temperature 550°F

Other _____

QW-483 (Back)PQR No. 01A08**Tensile Test (QW-150)**

Specimen Number	Width	Thickness	Area	Ultimate Total Load	Ultimate Unit Stress (psi or MPa)	Type of Failure & Location
1	.750"	.356"	.267	17500	65500	BM
2	.750	.378	.283	18000	63600	BM

Guided Bend Tests (QW-160)

Type and Figure No.	Result
Face QW 462.3a	Acceptable
Face QW 462.3a	Acceptable
Root QW 462.3a	Acceptable
Root QW 462.3a	Acceptable

Toughness Tests (QW-170)

Specimen Number	Notch Location	Specimen Size	Test Temperature	Impact Values			Drop Weight Break (Yes/No)
				Ft-lb or J	% Shear	Mils (in.) or mm	

Comments _____

Fillet Weld Test (QW-180)

Result- Satisfactory: Yes _____ No _____ Penetration into Parent Metal: Yes _____ No _____

Macro - Results _____

Other Tests
 Type of Test _____
 Deposit Analysis _____
 Other _____

 Welders Name _____ Clock No. _____ Stamp No. _____
 Tests Conducted by _____ Laboratory Test Number 2012-12910

We certify that statements made 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 Boiler and Pressure Vessel Code

Manufacturer or Contractor _____

Date _____ Certified By _____

(Detail of record of tests are illustrative only and may be modified to conform to the type and number of tests required by the code.)

QW-482 SUGGESTED FORMAT FOR WELDING PROCEDURE SPECIFICATION (WPS)**(See QW-201.1, Section IX, ASME Boiler and Pressure Vessel Code)**

Company Name _____ By: _____

Welding Procedure Specification No. 01A09 Date: 11/19-2012 Supporting PQR No.(s) 01A09

Revision No. 0 Date _____

Welding Process(es) SMAW/SMAW Type (s) Manual
(Automatic, Manual, Machine or Semi-Automatic)

JOINTS (QW-402)

Joint Design All

Root Spacing 0-3/16"

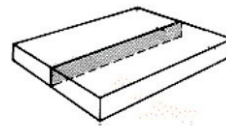
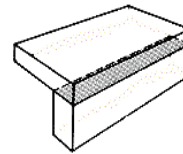
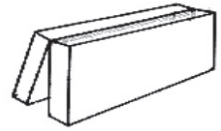
Backing (Yes) X (2) (No) X (1)

Backing Material (Type) Weld Metal
(refer to both backing and retainers)

Details

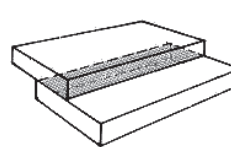
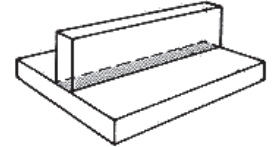
☒ Metal
☐ Nonmetallic

☐ Nonfusing Metal
☐ Other

**FIG A (BUTT JOINT)****FIG B (CORNER JOINT)****FIG C (EDGE JOINT)**

Sketches, Production Drawings, Weld Symbols or Written Description should show the general arrangement of the parts to be welded. Where applicable, the root spacing and the details of weld groove may be specified.

[At the option of the manufacturer, sketches may be attached to illustrate joint design, weld layers and bead sequence (e.g., for notch toughness procedures, for multiple process procedures etc.)]

**FIG D (LAP JOINT)****FIG E (TEE JOINT)**

☐ Other (Describe) _____

☒ Figure A ☐ Figure B ☐ Figure C ☐ Figure D ☐ Figure E

***BASE METALS (QW-403)**

P-No. _____ Group No. _____ to P-No. _____ Group No. _____

OR

Specification type/grade or UNS number AISI 4131
to Specification type/grade or UNS number SA-487 4A

OR

Chem. Analysis and Mech. Prop. _____
to Chem. Analysis and Mech. Prop. _____

Thickness Range:

Base Metal: Groove .1875- .8640 Fillet All

Other _____

Maximum Pass Thickness $\leq 1/2$ inch (13 mm) (Yes) ☒ (No) ☐

***FILLER METALS (QW-404)**

	1	2	3	4
Spec. No. (SFA)	5.5			
AWS No. (Class)	E10018-D2			
F-No.	4			
A-No.	11			
Size of Filler Metals	3/32 thru 5/32			
Filler Metal Product Form				
Supplemental Filler Metal	None			
Weld Metal				
Thickness Range:				
Groove	0 thru .8640			
Fillet	All			
Electrode-Flux (Class)	N/A	n/a		
Flux Type	n/a	n/a		
Flux Trade Name	n/a	n/a		
Consumable Insert	None	None		
Other				

*Each base metal-filler metal combination should be recorded individually.

QW-482 (Back)

WPS No. 01A09 Rev 0

POSITIONS (QW-405)

Position(s) of Groove All

POST WELD HEAT TREATMENT (QW-407)

Temperature Range None

Welding Progression: Up E10018-D2 Down Position(s) of Fillet All Other					Time Range Other																																																																																																																																										
PREHEAT (QW-406) Preheat Temperature, Minimum 350°F Interpass Temperature Maximum 450°F Preheat Maintenance None Other (Continuous or special heating where applicable should be recorded)					GAS (QW-408) <table><tr><td></td><td colspan="2">Percent Composition</td><td></td></tr><tr><td></td><td>Gas(es)</td><td>(Mixture)</td><td>Flow Rate</td></tr><tr><td>Shielding</td><td></td><td></td><td></td></tr><tr><td>Trailing</td><td></td><td></td><td></td></tr><tr><td>Backing</td><td></td><td></td><td></td></tr><tr><td>Other</td><td></td><td></td><td></td></tr></table>					Percent Composition				Gas(es)	(Mixture)	Flow Rate	Shielding				Trailing				Backing				Other																																																																																																																		
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(Amperage and voltage range should be recorded for each electrode size, position, and thickness, etc) Pulsing Current Heat Input (max) None Tungsten Electrode Size and Type (Pure Tungsten, 2% Thoriated, etc.) Mode of Metal Transfer for GMAW (Spray arc, short circuiting arc, etc.) Electrode Wire feed speed range Other																																																																																																																																															
TECHNIQUE (QW-410) String or Weave Bead String & Weave Orifice or Gas Cup Size Initial and Interpass Cleaning (Brushing, Grinding, etc.) Welds shall be cleaned between each pass by brsushing & or Grinding Method of Back Gouging Grinding or Air arc Oscillation Contact Tube to Work Distance Multiple or Single Pass (per side) Multiple Multiple or Single Electrodes Single Electrode Spacing n/a Peening None Other																																																																																																																																															