WQTR No. | Welder Name **Ryan Olah** | Welder Id **#4796**

WPS No. **AWS-D11-GMAW-Rev.1** | Revision **1** | Date **2/12/2010**

Variables	Record Actual Values Used In Qualification	Qualification Range
Process (Table 4.10, Item (1))	**GMAW**	**GMAW**
Transfer Mode (GMAW):	Short-Cir. ☐ Globular ☐ Spray ☒	Short-Circuiting ☐ Globular ☐ Spray ☒
Type	Manual ☐ Machine ☐ Semi-Auto ☒ Auto ☐	Manual ☐ Machine ☐ Semi-Auto ☒ Auto ☐
Number of Electrodes	Single ☒ Multiple ☐	Single ☒ Multiple ☐
Current/Polarity	AC ☐ DCEP ☒ DCEN ☐ Pulsed ☐	AC ☐ DCEP ☒ DCEN ☐ Pulsed ☐
Position (Table 4.10, Item (4))	**2G**	**Flat, 1G,2G, 1F, 2F**
Weld Progression: (Table 4.10, Item (6))	Up ☐ Down ☐	Up ☐ Down ☐
Backing [Table 4.10, Item (7)]	Use Backing ☒	With Backing ☒ Without Backing ☒
Consumable Insert (GTAW)	Use Insert ☐	With Insert ☐ Without Insert ☐
Material/Spec.	**ASTM A36** to **ASTM A36**	**Any Groups I and II**
Thickness (Plate): Groove (in)	**1**	**1/8 in. - Unlimited**
Fillet ( )	**NA**	**1/8 in. - Unlimited**
Thickness (Pipe/tube): Groove ( )	**NA**	**1/8 in. - Unlimited**
Fillet ( )	**NA**	**1/8 in. - Unlimited**
Diameter(Pipe): Groove ( )	**NA**	**24" Dia.^ - Unlimited**
Fillet ( )	**NA**	**All - All**
Notes		**See D1.1, Table 3.1 for Base Metals**
Filler Metal (Table 10, Item (2))		
Spec.	**AWS- A5.18**	**A5.18**
Class.	**E 70C- 6M**	**E7XX-X GMAW**
F-No.	**6**	
Gas/Flux Type (Table 4.10, Item (3))	**Argon / CO2 92% - 8%**	**Argon / CO2**
Other		

VISUAL INSPECTION (4.8.1) Acceptable Yes

GUIDED BEND TEST RESULTS (4.30.5)

Type	Result	Type	Result
NA	NA	NA	NA
NA	NA	NA	NA

AWS QC 1 MICHAEL G. WILLIAMS 92120971 CWI

Fillet Test Results (4.30.2.3 and 4.30.4.1)

Appearance **NA** Fillet Size **NA** Macroetch **NA**

Fracture Test Root Penetration **NA** Description

Inspected By **Michael G. Williams** Test No. **KCSS-2010-WQTR2-4796**ation **CWI# 92120971** Date **2/12/2010**

RADIOGRAPHIC TEST RESULTS (4.30.3.1)

Film Identification No.	Result	Remark
4796 2G	acceptable	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA

Interpreted By **Raymond Hiersche Sr.**
Organization **Comotech Inspection**
Test No. **47962G**
Date **2/15/2010**

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 section 4 of ANSI/AWS D1.1, (2008Structural Welding Code-Steel.

Manufacturer | Authorized By | Date **2/12/2010**

AWS D1.6 Welding Procedure Specification (WPS)

WPS No. GWM-FCAW-SS-001 Date 6/11/2013 Rev. No. 0

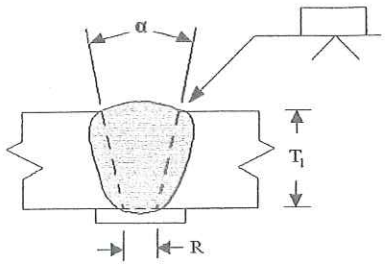
Prepared By: Barry Hamilton Date 6/11/2013 AWS CWI #05081391

Welding Process FCAW Welding Method Semiautomatic

Joint Design Used

Weld Type CJP Groove welds
Joint Type Butt joint
Groove Type Single-V groove
Double Welded No
Backing Yes Material Stainless Steel Backing
Root Opening 3/16 in. Root Face 0 in.
Groove Angle 30° Radius N/A
Back Gouging No Method N/A

Joint Designation B-U2a-GF



Base Metals

Base Metal 304 Stainless Steel
Thickness: Groove 1/8 in. min.
Thickness: Fillet N/A
Pipe Diameter 3/8 in. min.

Filler Metals

AWS Specification A5.22
AWS Classification E308LT1-1
Trade Name CRYO-SHIELD 308L

Shielding

Gas 75% Argon, 25% CO2 Flow Rate 27-36 CFH
Gas Cup Size 5/8"
Electrode-Flux (Class) N/A
Flux Trade Name N/A

Preheat

Preheat Temperature, Min. 50°F
Interpass Temperature, Min. 50°F Max. 350°F

Position

Weld Position: Groove All
Weld Position: Fillet N/A
Vertical Progression Vertical up

Electrical Characteristics

Power Source
Output Constant Voltage
Current / Polarity DCEP (reverse)
Transfer Mode Spray arc
Tungsten Electrode: Type N/A Size N/A

Technique

Stringer or Weave Bead Weave bead
Multi-pass or Single Pass (per side) Single or multipass
Number of Electrodes 1
Electrode Spacing: Longitudinal N/A
Lateral N/A Angle N/A
Contact Tube to Work Distance Various
Peening None
Interpass Cleaning Mecahnical Stainless Steel Wire Brush

Postweld Heat Treatment

Temperature None
Time (hr.) None

Welding Procedure

Pass or Weld Layer(s)	Process	Filler Metal AWS Classification	Filler Metal Size (in.)	Current Type & Polarity	Current Amps	Wire Feed Speed (in/min)	Volts	Travel Speed (in/min)
All	FCAW	E308LT1-1	0.045	DCEP (reverse)	153 - 187	347-423	26-28	5 - 10

Additional Notes

JOINT NOTES:

(a)Not Prequalified for GMAW-S nor GTAW. (j) The orientation of the two members in the joints may vary from 135° to 180° for butt joints, or 45° to 135° for corner joints, or 45° to 90° for T-joints.

Welder or Welding Operator Qualification Test Record (WPQR)

Welder's Name: **Olah, Ryan** Stamp: **GWM-RO**

Test WPS No.: **GWM-FCAW-SS-001** Rev.: **0** WPQ No.: **N/A** Date: **6/11/2013** Page 1

Type of joint welded: Plate Groove weld

Joint type(s) qualified: All applicable groove, fillet, plug, and slot welds (except CJP T-, Y-, & K-connections)

Base metal(s) welded: 304 Stainless Steel to 304 Stainless Steel

Variables (Table 4.12)	Actual Values Used	Range Qualified
Welding process / type	FCAW / Semiautomatic	FCAW / Semiautomatic, Machine, and Automatic
Base metal thickness - groove (in.)	.750	CJP: 1/8" to 1.500" PJP: 1/8" to unlimited
Base metal thickness - fillet (in.)	N/A	1/8" to unlimited
Pipe diameter - groove (in.)	N/A	24" and over with backing, back gouging or both
Pipe diameter - fillet (in.)	N/A	All diameters.
Box tube size (in.)	N/A	All sizes with backing, back gouging or both
Dihedral angle - fillet	N/A	30° to unlimited
Backing	Backing used	With backing only
Filler metal classification	E308LT1-1	
Filler metal specification	A5.22	
Filler metal F-No.	N/A	N/A
Welding position - groove	2G - Horizontal	Flat & Horizontal
Welding position - fillet	N/A	Flat & Horizontal
Weld progression	N/A	N/A
Shielding gas	75% ARGON, 25% CO2	
Welding current / polarity	DCEP (reverse)	
Transfer mode (GMAW)	N/A	N/A
Single / multiple electrode	N/A	N/A

Notes:

Visual inspection acceptable: Yes Other test results:

Guided Bend Test (4.31.5)

Figure Number and Type	Result	Figure Number and Type	Result
None		None	
None		None	
None		None	

Organization: Test No.:

Inspected by: Date

Radiographic Test Results (4.31.3.2)

Film ID No.	Result	Remarks	Film ID No.	Result	Remarks
RO	Acceptable	None			

Organization: Acuren Inspection Inc. Test No.: 2013-627

Interpreted by: Brain Moody 6/11/2013 RT Level II
Date

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 the AWS D1.6/D1.6M Structural Welding Code-Stainless Steel.

Manufacturer or Contractor: Gas Work Manufacturing

Kyle Conaway 6/11/13
Date

Kyle B Conaway
CWI 98101181
QC1 EXP. 10/1/2013