QW-484 SUGGESTED FORMAT FOR WELDER/WELDING OPERATOR PERFORMANCE QUALIFICATIONS (WPQ)

(See QW-301, Section IX, ASME Boiler and Pressure Vessel Code)

Welder's name: Jeff Harper | Clock number: | Stamp no.: H1849

Welding process(es) used: GTAW & SMAW | Type: Manual

Identification of WPS followed by welder during welding of test coupon: GT-SM-801, Revision 1; Dated October 10, 2006

Base material(s) welded: SA-312 Type 304 | Thickness: 0.218

Manual or Semiautomatic Variables for Each Process (QW-350)	Actual Values	Range Qualified
Backing (metal, weld metal, welded from both sides, flux, etc.) (WQ-402)	None	Note 1
ASME P-No. 8 to ASME P-No. (QW-403)	8	P1 thru P11, P34, P41 thru P49
[ ] Plate [X] Pipe (enter diameter, if pipe)	2" Sch 80	Note 2
Filler metal specification (SFA): A5.9 and A5.4 Classification (QW-404)	ER308L & E308	
Filler metal F-No.	F6 and F5	Root F6, Filler Passes F5
Filler metal variety for GTAW, PAW (QW-404)	Bare (solid)	Bare or Metal cored
Consumable insert for GTAW OR PAW	None	None
Weld deposit thickness for each welding process No. of Layers 2	GTAW 0.094	Note 3
No. of Layers 3	SMAW 0.124	Note 3
Welding position (1G, 5G, etc.) (QW-405)	6G	Unlimited Positions
Progression (uphill/downhill)	Uphill	Uphill
Backing gas for GTAW, PAW, or GMAW; fuel gas for OFW (QW-408)	Argon	With Backing Gas
GMAW transfer mode (QW-409)	N/A	N/A
GTAW welding current type/polarity	DCEN	DCEN

Machine Welding Variables for the Process Used (QW-360)	Actual Values	Range Qualified
Direct/remote visual control		
Automatic voltage control (GTAW)		
Automatic joint tracking		
Welding position (1G, 5G, etc.)		
Consumable insert		
Backing (metal, weld metal, welded from both sides, flux, etc.)		

Guided Bend Test Results

Guided Bend Test Type ( ) QW-462.2 (Side) Results (X) QW-462.3(a) (Trans. R & F) Type ( ) QW-462.3(b) (Long. R & F) Results

Two Face Bends	Passed PQR GT-SM-801 on		
Two Root Bends	October 10, 2006		

Note 1: GTAW - With or without backing; SMAW - With backing

Note 2: Diameters Qualified: Groove welds 1.0" O.D. and over. Unlimited diameters for fillet welds

Note 3: Thickness Qualified: Groove welds; Thru .188" Deposit Thickness with the GTAW Welding Process; Thru 0.248" Deposit Thickness with the SMAW Welding Process. Fillet welds Unlimited Thickness Weld Deposit for both GTAW and SMAW Welding processes.

Visual examination results (QW-302.4): Acceptable

Radiographic test results (QW-304 and QW-305): N/A

(for alternative qualification of groove welds by radiography)

Fillet Weld - Fracture test: | Length and percent of defects: | in.

Macro test fusion: | Fillet leg size: in. x in. Concavity/convexity: in.

Welding test conducted by: Bill Galooley

Mechanical tests conducted by: Calumet Testing Services | Laboratory test no.: CTS Job No. 9199

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

Organization: Advantage Industrial Systems, LLC

Date: October 10, 2005 By:

QW-484 SUGGESTED FORMAT FOR WELDER/WELDING OPERATOR PERFORMANCE QUALIFICATIONS (WPQ)

(See QW-301, Section IX, ASME Boiler and Pressure Vessel Code)

Welder's name: Jeff Harper | Clock number: | Stamp no.: H1849
Welding process(es) used: SMAW | Type: Manual
Identification of WPS followed by welder during welding of test coupon: SM-101, Revision 1: Dated October 10, 2006
Base material(s) welded: SA-106 Grade B | Thickness: 0.218

Manual or Semiautomatic Variables for Each Process (QW-350)	Actual Values	Range Qualified
Backing (metal, weld metal, welded from both sides, flux, etc.) (WQ-402)	None	Note 1
ASME P-No. 1 to ASME P-No. (QW-403)	1	P1 thru P11 to P1 thru P11
[ ] Plate [X] Pipe (enter diameter, if pipe)	2" Sch. 80	Note 2
Filler metal specification (SFA): 5.1 Classification (QW-404)	E6010 & E7018	
Filler metal F-No.	3 & 4	F1, F2, F3 and F4
Filler metal variety for GTAW, PAW (QW-404)	N/A	N/A
Consumable insert for GTAW OR PAW	N/A	N/A
Weld deposit thickness for each welding process	0.218	Note 3
Welding position (1G, 5G, etc.) (QW-405)	6G	Unlimited Positions
Progression (uphill/downhill)	N/A	N/A
Backing gas for GTAW, PAW, or GMAW; fuel gas for OFW (QW-408)	N/A	N/A
GMAW transfer mode (QW-409)	N/A	N/A
GTAW welding current type/polarity	N/A	N/A

Machine Welding Variables for the Process Used (QW-360)	Actual Values	Range Qualified
Direct/remote visual control		
Automatic voltage control (GTAW)		
Automatic joint tracking		
Welding position (1G, 5G, etc.)		
Consumable insert		
Backing (metal, weld metal, welded from both sides, flux, etc.)		

Guided Bend Test Results

Guided Bend Test Type	{ } QW-462.2 (Side) Results	{ X } QW-462.3(a) (Trans. R & F) Type	{ } QW-462.3(b) (Long. R & F) Results
Two Root Bends	Passed PQR SM-101 on October 11, 2006		
Two Face Bends			

Note 1: F3 Electrodes - With or without backing; F1, F2 and F4 Electrodes - With backing
Note 2: Diameters Qualified: Groove welds 1.0" O.D. and over, Unlimited diameters for fillet welds
Note 3 Weld Deposit Qualified: Groove welds Thru 0.436" Weld Deposit Thickness , Unlimited Weld Deposit thickness for fillet welds

Visual examination results (QW-302.4): Acceptable
Radiographic test results (QW-304 and QW-305): N/A
(for alternative qualification of groove welds by radiography)
Fillet Weld - Fracture test: | Length and percent of defects: | in.
Macro test fusion: | Fillet leg size: in. x in. Concavity/convexity: in.
Welding test conducted by: Bill Galooley
Mechanical tests conducted by: Calumet Testing Services | Laboratory test no.: CTS Job No. 9199

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

Organization: Advantage Industrial Systems, LLC

Date: October 10, 2006 By:

QW-484 SUGGESTED FORMAT FOR WELDER/WELDING OPERATOR PERFORMANCE QUALIFICATIONS (WPQ)

(See QW-301, Section IX, ASME Boiler and Pressure Vessel Code)

Welder's name Jeff Harper Clock number _____ Stamp no. H1849
Welding process(es) used SMAW Type Manual
Identification of WPS followed by welder during welding of test coupon SM-101, Revision 1: Dated October 10, 2006
Base material(s) welded SA-106 Grade B Thickness 0.218

Manual or Semiautomatic Variables for Each Process (QW-350)	Actual Values	Range Qualified
Backing (metal, weld metal, welded from both sides, flux, etc.) (WQ-402)	None	Note 1
ASME P-No. 1 to ASME P-No. (QW-403)	1	P1 thru P11 to P1 thru P11
[ ] Plate [X] Pipe (enter diameter, if pipe)	2" Sch. 80	Note 2
Filler metal specification (SFA): 5.1 Classification (QW-404)	E6010 & E7018	
Filler metal F-No.	3 & 4	F1, F2, F3 and F4
Filler metal variety for GTAW, PAW (QW-404)	N/A	N/A
Consumable insert for GTAW OR PAW	N/A	N/A
Weld deposit thickness for each welding process	0.218	Note 3
Welding position (1G, 5G, etc.) (QW-405)	6G	Unlimited Positions
Progression (uphill/downhill)	N/A	N/A
Backing gas for GTAW, PAW, or GMAW; fuel gas for OFW (QW-408)	N/A	N/A
GMAW transfer mode (QW-409)	N/A	N/A
GTAW welding current type/polarity	N/A	N/A

Machine Welding Variables for the Process Used (QW-360)	Actual Values	Range Qualified
Direct/remote visual control		
Automatic voltage control (GTAW)		
Automatic joint tracking		
Welding position (1G, 5G, etc.)		
Consumable insert		
Backing (metal, weld metal, welded from both sides, flux, etc.)		

Guided Bend Test Results

Guided Bend Test Type	[ ] QW-462.2 (Side) Results	[X] QW-462.3(a) (Trans. R & F) Type	[ ] QW-462.3(b) (Long. R & F) Results
Two Root Bends	Passed PQR SM-101 on October 11, 2006		
Two Face Bends			

Note 1: F3 Electrodes - With or without backing; F1, F2 and F4 Electrodes - With backing
Note 2: Diameters Qualified: Groove welds 1.0" O.D. and over, Unlimited diameters for fillet welds
Note 3 Weld Deposit Qualified: Groove welds Thru 0.436" Weld Deposit Thickness , Unlimited Weld Deposit thickness for fillet welds

Visual examination results (QW-302.4) Acceptable
Radiographic test results (QW-304 and QW-305) N/A
(for alternative qualification of groove welds by radiography)
Fillet Weld - Fracture test _____ Length and percent of defects _____ in.
Macro test fusion _____ Fillet leg size _____ in. x _____ in. Concavity/convexity _____ in.
Welding test conducted by Bill Galooley
Mechanical tests conducted by Calumet Testing Services Laboratory test no. CTS Job No. 9199

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

Organization Advantage Industrial Systems, LLC

Date October 10, 2006 By _____