

WPS record number	AS-W-SM/FC1-1.1	Revision	Qualified to	ASME Section IX
Date	12/30/2017		Company name	Welding Inspection Services
Supporting PQR(s)	AS-P-SM1-1.2, AS-P-FC1-1.1			
Reference docs.				

Scope	E6010 Root/Hotpass UH, Followed by FCAW Groove, no PWHT (As-welded)
Joint	Joint details for this welding procedure specification in: JOINTS section of this WPS

BASE METALS (QW-403)

Type	Carbon steel (P1)	P-no. 1	Grp-no. 1
Welded to	Carbon steel (P1)	P-no. 1	Grp-no. 1
Backing:	None	P-no.	Grp-no.
Retainers	None		
Notes			

THICKNESS RANGE QUALIFIED (in.)

	As-welded		With PWHT	
	Min.	Max.	Min.	Max.
Complete pen.	0.063	0.75	-	-
Impact tested	-	-	-	-
Partial pen.	0.063	0.75	-	-
Fillet welds	-	-	-	-

DIAMETER RANGE QUALIFIED (in.)

	As-welded		With PWHT	
	Min.	Max.	Min.	Max.
Nominal pipe size	no min.	no max.	-	-

FILLER METALS (QW-404)

	SFA	Classification	F-no.	A-no.	Chemical analysis or Trade name	As-welded		With PWHT	
						Min.	Max.	Min.	Max.
SMAW	5.1	E6010	3	1	Lincoln 5P+	no min.	0.75	-	-
FCAW	5.20	E71T-1M	6	-	-	no min.	0.75	-	-
Sup. filler	-	-	-	-	-	- None -			

WELDING PROCEDURE

	SMAW	FCAW
Welding process	SMAW	FCAW
Type	Manual	Semi-automatic
Minimum preheat/interpass temperature (°F)	50	50
Maximum interpass temperature (°F)	450 Max	500
Filler metal size (in.)	1/8"	.045"
Layer number	Root	All
Position	All	-
Weld progression	Uphill	Uphill
Current/polarity	DCRP	DCRP
Waveform control	Not Used	Not Used
Energy (J)	-	-
Power (J/s)	-	-
Amperes	60-110	130-215
Volts	-	20-29
Travel speed (in./min)	-	-
Maximum heat input (kJ/in.)	-	-
Wire feed speed (in./min)	-	175-400
Arc transfer mode	-	Spray or Globular
Shielding: Gas type	-	AC-25 (A5.32 SG-)
Flow rate (cfh)	-	45
Trailing: Gas type	-	None
Flow rate (cfh)	-	-
Backing: Gas type	-	None
Flow rate (cfh)	-	-
String or weave	Stringer or Weave	Stringer or Weave
Orifice/gas cup size	-	5/8
C.T.W.D (in.)	-	5/8" to 1"
Multi/Single pass per side	Multiple passes	Multiple passes
Maximum pass thickness (in.)	.125"	.375"
Weld deposit chemistry	-	-
Notes	Max 1/4" Deposited 6010	

WPS record number	AS-W-SM/FC1-1.1	Revision	Qualified to	ASME Section IX
Date	12/30/2017		Company name	Welding Inspection Services

JOINTS (QW-402) Typical joint(s). See actual production drawings and engineering specifications for details.



PREHEAT TABLE

Applicable standard	
ASME B31.1	175 (°F) for thickness over 1 (in.) and specified maximum carbon content over 0.30%. 50 (°F) for all other materials.

TECHNIQUE (QW-410)

Peening	Not used
Surface preparation	Remove all mill scale and foreign material from groove faces and interior surfaces at root
Initial/interpass cleaning	Brushing and Grinding as required.
Back gouging method	None

NOTES

See page 3

Signature 1

Name	Signature
Date	

Signature 2

Name	Signature
Date	

Signature 3

Name	Signature
Date	

Manufacturer or Contractor Authorization

Name	Signature
Date	

WPS record number	AS-W-SM/FC1-1.1	Revision	Qualified to	ASME Section IX
Date	12/30/2017		Company name	Welding Inspection Services

1) For Production welds note the following:

1.1) This WPS shall only be used by employees or subcontractors that have been tested and qualified under the supervision of Welding Inspection Services, Greenville TN.

1.2) This WPS may be used in conjunction with other qualified WPS's as allowed by ASME Sec. IX or the applicable code of construction.

1.3) All project specific restrictions shall be reviewed prior to use of this WPS to assure that requirements of all customer specifications are complied with.

2) For Welder Performance Qualification Note the following

2.1) All test assemblies must be marked with a suitable identification that will identify the individual test and match all supporting documentation. (WPQT1 #)

2.2) Acceptance criteria shall be per ASME Sec. IX and will have the following additional requirements.

2.2.1) All internal and external weld metal shall be free of overlap

2.2.2) Internal and External Reinforcement shall not exceed 5/32"

2.2.3) Undercut shall not exceed 1/32"

2.2.4) Internal Concavity (Suckback) shall not exceed 1/16"

2.2.5) Variations in bead width, bead height, bead shape and bead placement may be cause for rejection at the discretion of the test supervisor. This includes welds observed randomly during welding. Excessive grinding during welding may be cause for rejection.

2.3 Hold points for inspection shall be as follows:

2.3.1) Joint Preparation and Fitup. (3 to 4 tacks, 1/4" length max). Root face and Root opening tolerance are +/- 1/16". Groove angle +15/-5

2.3.2) Placing in position (shall be secured in a manner that prevents accidental removal). Should a test assembly be noted as being removed from the test position, the test shall be considered failed.

2.3.3) Root Pass before grinding. This shall include internal and external inspection however if a defect is noted after cutting bend specimens, the test shall be considered failed.

2.3.4) Random intermediate inspection may be performed at the discretion of the test supervisor.

2.3.5) Final Inspection of cap shall be performed before any grinding other than starts/stops. Grinding/Filing of base metal that reduces the thickness by more than 1/32" shall be cause for rejections.

2.4) The test supervisor may stop the test at any time based upon observation of welding practices, safety practices, or utilizing assistance from others. You may not be "coached" during the test by anyone.

2.5) If you are testing as an AWS Certified Welder, you shall be responsible for assuring you understand the requirements of AWS QC-7 and any applicable supplements.

2.6) If testing as an AWS Certified Welder and you feel that your test was not properly administered, you may file a formal complaint with the organizations designated facility representative and if needed, the American Welding Society.

2.7) The time limit for the test is 2-1/2 hours from the time the root pass is started. This is for a 2-3/4" x 5/8" Coupon. If testing on another coupon size, the time limit must be stated before start of the test by the test supervisor.