XYZ Fabrications Ltd

Granta Park, Cambridge, CB1 6AL, UK

ASME IX - Welding Procedure Specification

Weldspec software by TWI Ltd

WPS record number	WPS-211 Revision 01	Qualified to	ASME Section IX
Date	13/01/2006	Company name	XYZ Fabrications Ltd
Supporting PQR(s)	PQR 1612B - Rev 0		
Reference docs.	Contract CT5100-06-1 for Johnson-Marks Project		

Scope	Logitudinal and circumferential welds. Groove, impact testing, with PWHT
Joint	Joint details for this welding procedure specification in: JOINTS (QW-402) 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			
Notes	Batch No. 6055.4		

THICKNESS RANGE QUALIFIED (mm)

	As-welded Min.	As-welded Max.	With PWHT Min.	With PWHT Max.
Complete pen.	-	-	5	200
Impact tested	-	-	16	200
Partial pen.	-	-	5	no max.
Fillet welds	-	-	-	-

DIAMETER RANGE QUALIFIED (mm)

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

FILLER METALS (QW-404)

THICKNESS RANGE QUALIFIED (mm)

	SFA	Classification	F-no.	A-no.	Chemical analysis or Trade name	As-welded Min.	As-welded Max.	With PWHT Min.	With PWHT Max.
SMAW	5.5	E9018-G	4	10	Oerlikon Tenacito 65R	-	-	no min.	6
SAW	5.23	EF3	6	10	Oerlikon S3 Ni.Mo 1	-	-	no min.	200
Flux		EF3			Oerlikon OP121TT	- Required -			
Sup. filler	-	-	-	-	-	- None -			

Flux type	Active flux
Flux from recrush. slag	No

WELDING PROCEDURE

Welding process		SMAW	SAW	
Type		Manual	Machine	
Minimum preheat/interpass temp.	(°C)	95	95	
Maximum interpass temperature	(°C)	305	305	
Filler metal size	(mm)	5.0 (tack/seal)	4.0 (1-2)	5.0 (3-61 & 1-22)
Layer number		All	All	All
Position of groove		All except Vertical Up	1G	1G
Weld progression		-	-	
Current/polarity		AC	DC +ve	DC +ve
Amperes		220-230	500-550	550
Volts		22-24	30-32	30-32
Travel speed	(mm/min)	223-223	550	550
Maximum heat input	(kJ/mm)	1.3-1.5	1.6-1.9	1.8-1.9
Wire feed type		-	Cold wire	Cold wire
Wire feed speed	(m/min)	-	-	-
String or weave		Stringer or Weave	Stringer	
C.T.W.D	(mm)	-	20-35	
Multi/Single pass per side		Single pass	Multiple passes	
Multiple or single layer		-	Multiple layer	
Oscillation		-	None	
Multi/single electrode		-	Single electrode	
Electrode angle	(deg.)	-	90	90
Maximum pass thickness	(mm)	3	6	
Weld deposit chemistry				
Notes				

XYZ Fabrications Ltd

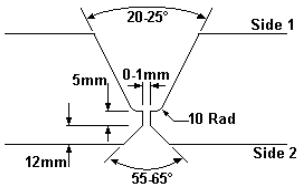
Granta Park, Cambridge, CB1 6AL, UK

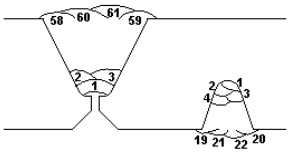
ASME IX - Welding Procedure Specification, page 2

Weldspec software by TWI Ltd

WPS record number	WPS-211 Revision 01	Qualified to	ASME Section IX
Date	13/01/2006	Company name	XYZ Fabrications Ltd

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





PREHEAT TABLE

Applicable standard	
ASME B31.3	10 (°C) for thickness less than 25 (mm) and specified minimum tensile strength not over 490 (MPa). 79 (°C) for 25 (mm) and greater thickness, or if specified minimum tensile strength is over 490 (MPa). PWHT: 593-649 1hr/(25 mm) 1 hour minimum
ASME Section VIII Div. 1	79 (°C) for thickness over 25 (mm) and specified maximum carbon content over 0.30%. 10 (°C) for all other materials. PWHT: 1hr/(25 mm)

POST WELD HEAT TREATMENT (QW-407)

Temperature	(°C)	580-620	Time	(hrs)	1hr/(25 mm) 1 hour minimu	Type	Stress relief
Heating rate	(°C/hr)		Method		Gas bar burner		
Cooling rate	(°C/hr)		Method				
Notes		Electrodes baked at 350°C for 2 hours then held at 250°C. See procedure HTP 578.					

TECHNIQUE (QW-410)

Supplementary MF control	
Peening	Not used
Surface preparation	
Initial/interpass cleaning	Machine
Back gouging method	Air carbon arc

NOTES

Tack welds shall be made to the parameters detailed on Page 1.

Issued

Name	Signature
Andy Brightmore	Andy Brightmore
Date	
10/05/2006	

Approved

Name	Signature
Date	

Authorised

Name	Signature
Date	