



XYZ Fabrications Ltd
 44 High St, Weldtown, Australia
ASME IX PQR
 Weldspec software by TWI Ltd

PQR record number Date	TWI-PQR-24 20/08/2002	Revision	WPS record number Company name Welding standard	TWI-WPS-213 XYZ Fabrications Ltd ASME Section IX	Revision
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BASE METALS (QW-403)

	Product form	Specification (type or grade)	P no.	Grp-no.	Size	Sch.	Thick. (mm)	Dia. (mm)
Welded to:	Pipe	SA-335 (P11)	4	1	254.00	120	21.44	273.05
	Pipe	SA-335 (P12)	5a		254.00	120	21.44	273.05
and tested: Notes	With PWHT, With hardness							

POST WELD HEAT TREATMENT (QW-407)

Temperature (°C)	710	Time (hrs)	2	Type	
Heating rate (°C/hr)	220	Method	Resistance heaters		
Cooling rate (°C/hr)	260	Method	Air		
Notes					

JOINTS (QW-402)

Joint design	Single-V-groove		
Backing:	None		
Retainers			
Groove angle (deg.)	50		
Root opening (mm)	3.2		
Root face (mm)	0-1		

WELDING PROCESSES

Welding process	GTAW	FCAW
Type	Manual	Semi-automatic

FILLER METALS (QW-404)

SFA specification	5.28	5.29	
Classification	ER80S-G	E81T1-B2	
Filler metal F-number	6	6	
Weld metal A-number	3	3	
Filler metal nominal composition			
Filler metal trade name	TGS-1CM(Kobe)	DS 8000-B2	
Filler metal size (mm)	2.4	1.2	1.2
Deposited thickness (mm)	7	13	
Maximum pass thickness (mm)	4	5	
Weld deposit chemistry	Not specified	Not specified	
Supplemental filler metal	-	None	
Supplemental filler metal vol. (mm³)	-	None	

POSITION (QW-405)

Position of groove	6G	6G
Weld progression	-	-

PREHEAT (QW-406)

Preheat temperature (°C)	150	150
Maximum interpass temperature (°C)	300	300

GAS (QW-408)

Shielding gas:	Type	Argon 99.99%	Argon 99.99%	CO2	
	Flow rate (l/min)	15-20	15-20	10-15	10-15
Trailing gas:	Type	None	None	None	
	Flow rate (l/min)	-	-	-	-
Backing gas:	Type	Argon 99.99%	Argon 99.99%	None	
	Flow rate (l/min)	8-15	8-15	-	-

ELECTRICAL (QW-409)

Filler metal size (mm)	2.4	2.4	1.2	1.2	1.2
Amperes	150	180	180	190	170
Volts	16	17	23	25	24
Travel speed (mm/min)	80	120	180-220	170-200	210-270
Maximum heat input (kJ/mm)	1.8	1.53	1.13-1.55	1.43-1.68	0.91-1.17
Tungsten size (mm)		2.4		-	-
Tungsten type		SFA 5.12 EWTh-2		-	-
Current/polarity	DCSP	DCSP	DCRP	DCRP	DCRP
DC pulsing current		Not used		-	-
Wire feed speed (m/min)		-		-	-
Arc transfer mode		-		Spray	-

TECHNIQUE (QW-410)

String or weave	Stringer and Weave	Stringer and Weave
Orifice/gas cup size	No. 5-8	No. 12-20
C.T.W.D (mm)	-	Not specified
Multi/Single pass per side	Multiple passes	Multiple passes
Peening	Not used	Not used
Initial/interpass cleaning	Brushing/Chipping/Grinding	Brushing/Chipping/Grinding
Back gouging method	Not applicable	Not applicable



XYZ Fabrications Ltd
 44 High St, Weldtown, Australia
ASME - Procedure Qualification Record (PQR) - Test results (PWHT)
 Weldspec software by TWI Ltd

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TENSILE TESTS (QW-150)

Specimen number	Width (mm)	Thickness (mm)	Area (mm ²)	Ultimate total load (N)	Ultimate unit stress (MPa)	Reduced section
						Type of failure and location
1	19.0	20.6	391.40		537.5	Ductile-BM
2	19.0	20.5	389.50		538.6	Ductile-BM
Specified					413	

Comments: 2 reduced section tension tests per QW-151.2 and QW-462.1(c)

GUIDED BEND TESTS (QW-160)

Type of test	Acceptance criteria	Result	Comments
4 transverse side bends per QW-161.1 and QW-462.2	QW-163	Acceptable	see - ASME IX - QW-451.1

Comments: Dimensions - 9.5 x 22.6, 9.5 x 22.7, 9.5 x 22.7, 9.5 x 22.8. Bend - 180 deg, Mandrel diameter - 38mm

HARDNESS TEST

Type (Scale)	Distance from surface	SA-335 (P11)	HAZ	Weld	HAZ	SA-335 (P12)
Vickers (HV5)		169, 186	192, 227	232, 241		
		171, 181	225, 237	214, 255		
		183, 189	244, 246	231, 251		
		179, 179	235, 270			
		174, 183	236, 262			
		174, 193	224, 228			

Comments: See Report No. M02-08-90

OTHER TESTS

Type of test	Acceptance criteria	Result	Comments
Radiographic examination per QW-191 and QW-302.2		Acceptable	
Penetrant test		Acceptable	
Macro examination		Acceptable	

Comments: Report Nos - RT-WPQT-S-1027, PT-WPQT-S-0141 - Radiograph Nos - WP-BCCV-037, 0-1, 1-2, 2-3, 3-4, 4-0

CERTIFICATION

Welder's name	ID Number	Stamp number	Mechanical testing by Laboratory test number Test file number Tests conducted by	S G Park
Dick Hadfield	092	1005117-80		

We certify that the statements in this record are correct and tested in accordance with DNV, LR and BV Rules.

Welding Engineer

QA

Name	Signature	Name	Signature
Andy Brightmore			
Date		Date	
13/10/2005			

Examining Body

Name	Signature
Date	