

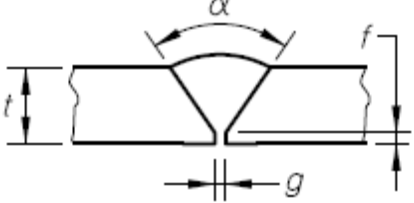
Procedure Qualification Record

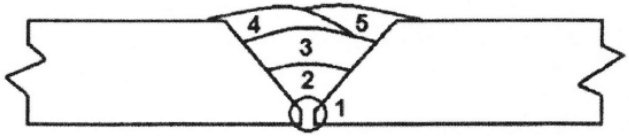
Asset Reliability Inspections
 ABN 72 129 831 376
 PO Box 2052, Bunbury WA 6231
 T 08 9725 7550
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 E info@ari.com.au
 W www.ari.com.au

WPQR No: 269 Revision: 0 Date: 14/06/2019

Essentials	Material Details
Standard: AS3992:2015 /ASME IX:2017 AWS D1.1:2015 / AS1554.1:2014	Material Group 1: ASTM A106B Material Group 2: ASTM A106B
Process: GTAW	Thickness 1: 8.56mm
Position: 6G	Thickness 2: 8.56mm
Progression: Up	Diameter: 100 NB SCH 80
Joint Type: Butt, Welded Single Side	

Consumable Details	Joint Parameters
Consumable Class: Comweld LW1 AWS A5.18:ER70S-4	Root Gap(g): 3mm
Consumable Class: -	Root Face (f): 1mm
Shielding Gas Type: 99.99% Argon	Groove Angle (α): 60°
Purging Gas Type: 99.99% Argon	

Welding Technique & Preparation	Joint Preparation
Preparation Method: Machined	
Interpass Cleaning: Ground	
Max Bead Width: 9mm (measured)	
Stringer/Weave: Weave	
Arc Transfer: N/A	
Electrical Stickout: N/A	
Gas Lens/Nozzle Size: 13mm	
Tungsten: 2.4mm Thoriated	

Thermal Treatment	Welding Sequence
Preheat Actual: Ambient 22°C	
Preheat Method: Not applicable	
Temperature Check: Laser	
Interpass Maximum: 140°C (measured)	
Post Weld Treatment: Not applicable	

Pass No	Side	Position	Process	Polarity	Electrode/Wire		Gas/Flux		Amperage	Voltage	Travel Speed mm/min	Heat Input Kj/mm
					Class	Size mm	Type	L/min				
1	1	6G	GTAW	DC-	ER70S-4	2.4	ARGON	17	105	12	25	3.02
2	1	6G	GTAW	DC-	ER70S-4	2.4	ARGON	17	140	12	76	1.33
3	1	6G	GTAW	DC-	ER70S-4	2.4	ARGON	17	150	13.5	81	1.51
4	1	6G	GTAW	DC-	ER70S-4	2.4	ARGON	17	127	13	68	1.47
5	1	6G	GTAW	DC-	ER70S-4	2.4	ARGON	17	127	13	72	1.38

Notes:

- This procedure qualification was produced by Asset Reliability Inspections.
- Material Heat # 1724321; Consumable Batch # 321412.
- Welded by Luke Mattaboni.

Witnessed By:	Prepared By:	Client/Third Party:
		Approved By: Signature: Date:

REPORT NO: ARI5677-02
 REPORT DATE: 17 June, 2019
 CLIENT: SRG Global
 ORDER NO: 07656 - 20
 CONTACT: Ryan Loverock
 PLACE OF TEST: ARI Laboratory, Bunbury
 THE RADIOGRAPHIC EXAMINATION OF : One welder and procedure qualification pipe coupon
 Job No: 07656
 ACCEPTANCE CRITERIA: AS4037 1999 Pressure Piping Table 8.2 Class 1, AS1554.1 – 2014
 ASME IX – 2017 and AWS D1.1 - 2015
 SUMMARY OF RESULTS: Complies

Technical Data:

Manufacturing Specification:	AS/NZS 3992-2015	Radiographic Standard:	AS 2177 - 2006
Viewing Technician:	P Perrot	Terminology:	AS4749,AS2177,AS2314,ASME V
Test Restriction:	Nil	Screen Type:	Pb 0.125 mm
Radiation Type:	Iridium 192, 259 GBq	Effective Size:	2.7mm, Source No 71483G
IQI Type:	DIN 10-16 Fe Film Side		
Radiography Procedure:	TP RT01 Radiography of Welded Joints		
Sensitivity Required:	AS/NZS 4037-1999 Table 3.2		
Density Range Achieved:	2.6 - 3.1		
Processing Details:	As per ARI procedure for the processing of radiographs.		

Test Results:

Test Date: 14/06/19

Identification		Area tested	Sens (mm)	Description, location and size of indications	Result
Coupon No	TP2	0 – 12	0.20	No discontinuities evident	Complies
Welder Name	Luke Mattaboni				
Weld Type	Butt				
Position	6G	12 – 24	0.20	No discontinuities evident	Complies
WPS No	PQR 269				
Process	GTAW				
Material Spec	ASTM A106 Grade B	24 – 0	0.20	No discontinuities evident	Complies
Size / Thickness	DN100 / 8.56mm				
Method	GR1 / DWS				



Nathan Lenane
Branch Manager

MATERIAL TEST REPORT



ABN 90 706 021 096
ACN 079 834 058

Job No: **MT19-01175 / 2** **MARINE INSPECTION SERVICE Pty Ltd**

Issued: 21 June 2019 Order No: 00000286

Client: **ASSET RELIABILITY INSPECTIONS PTY LTD**
BUNBURY, Western Australia

Attention: Neil Young

Description: The machining and mechanical testing of one only butt welded
Welder / Procedure Qualification test pipe.

Identification: PQR 269 GTAW 6G
Welder: L. Mataboni

Material Specification: ASTM A106 Grade B 100DIA x 8.56WT

Test Specification: ASME IX - 2017, AWS D1.1 - 2015, AS/NZS3992-2015 (AS1210 Class 1.)
AS/NZS1554.1-2014, Category SP.

Samples Received: 19/06/2019 Date Tested: 19/06/2019

1. Transverse Weld Tensile

Specimen Type: Reduced Section , Weld Reinforcement Removed.

Specimen	Width (mm)	Thickness (mm)	Maximum Force (kN)	Tensile Stress (MPa)	Fracture Location	Compliance
TT 1	19.9	7.01	69.0	493	Parent	Complies
TT 2	19.9	7.00	66.9	479	Parent	Complies

2. Face Bend:

Equipment Type: Transverse Guided Bend, Roller Support, Angle 180°.

Specimen	Dimensions (mm)	Former Diameter (mm)	Result	Compliance
FB 1	20 x 8.5	26	No Defects Apparent	Complies
FB 2	20 x 8.5	26	No Defects Apparent	Complies

3. Root Bend:

Equipment Type: Transverse Guided Bend, Roller Support, Angle 180°.

Specimen	Dimensions (mm)	Former Diameter (mm)	Result	Compliance
RB 1	20 x 8.5	26	0.2mm Fissure	Complies
RB 2	20 x 8.5	26	No Defects Apparent	Complies

MATERIAL TEST REPORT

Job No: MT19-01175 / 2



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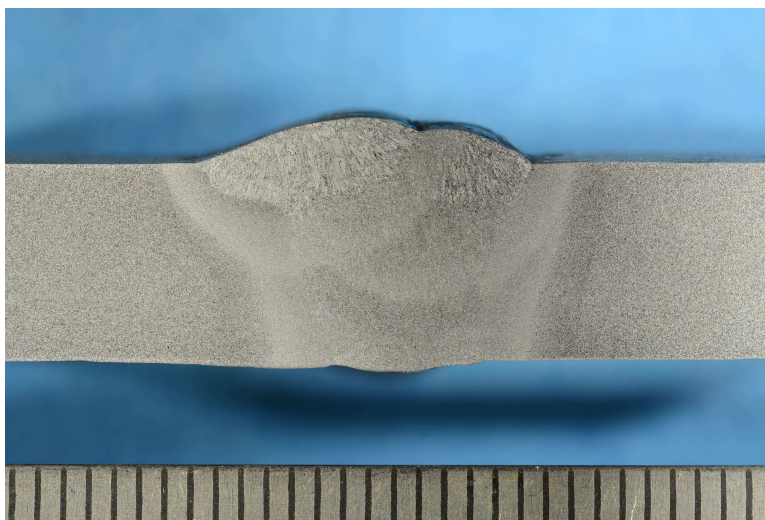
4. Macro Examination:

Specimen Examined at X20 Magnification,

Specimen	Etchant	Result	Compliance
MACRO 1	10% Nital	0.1mm Inclusion	Complies

5. Photo Macro:

NOTE: Graticule Scale = 1mm per Division



MACRO 1


Jeff Cook
Materials Testing Manager

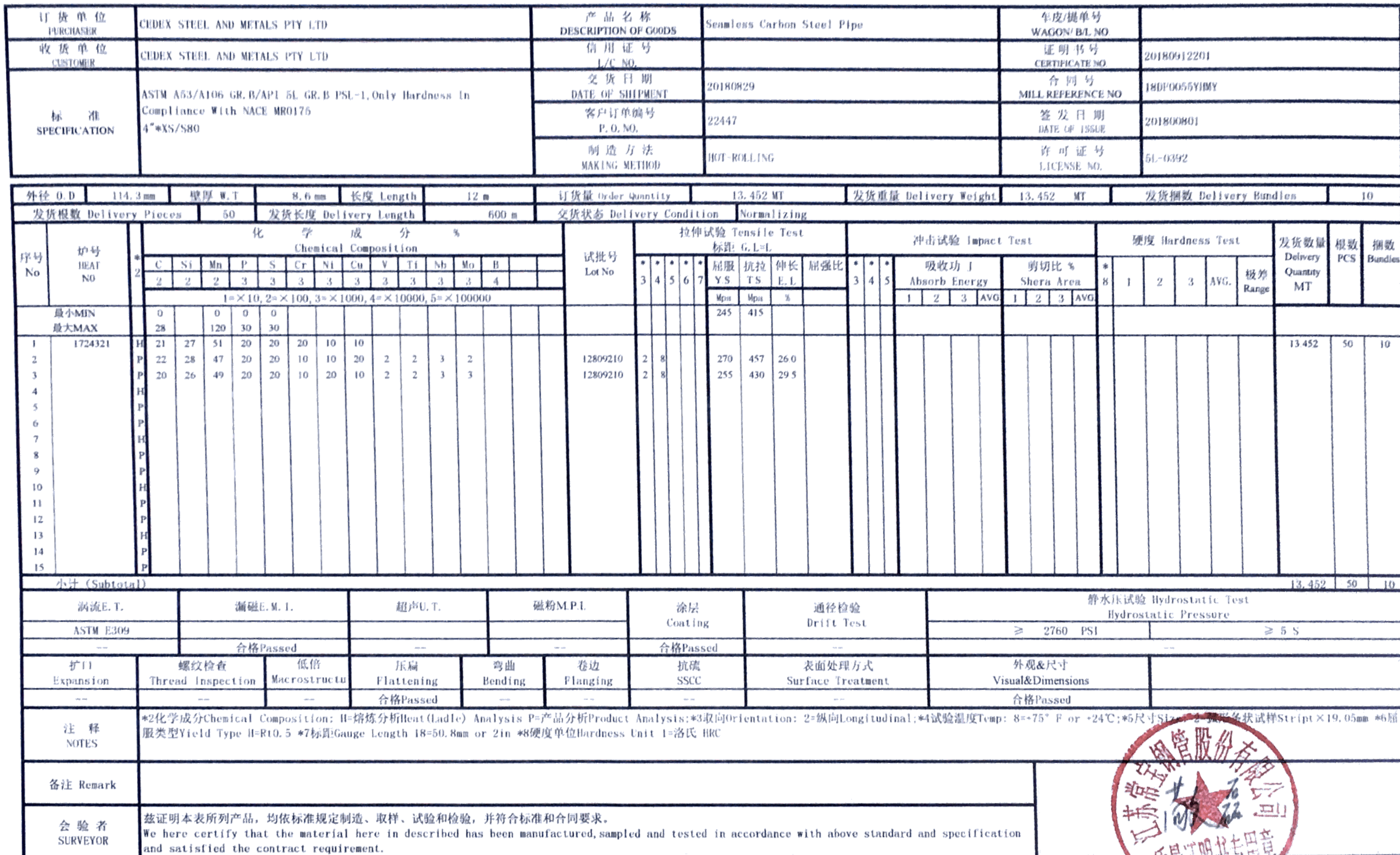


MILL TEST CERTIFICATE
EN 10204 3.1 ISO 10474 3.1B

中国江苏常州延陵东路558号
NO 558 Yanling East Road Changzhou Jiangsu PR China
TEL 86-519-88813911 FAX 86-519-88812052
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TS2710815





CIGWELD

Cigweld Pty Ltd
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71 Gower Street, Preston
Victoria, Australia 3072

Phone: (03) 9474 7422

Fax: (03) 9474 7391

Reference No. CWLW1-03

Quality Assurance Conformance Certificate

**THIS IS TO CERTIFY THAT THIS FILLER WIRE HAS BEEN
SUPPLIED IN ACCORDANCE WITH THE QUALITY ASSURANCE
PROCEDURES OF CIGWELD, FILLER METALS DIVISION.**

PRODUCT : COMWELD LW1

Classifications:

AS/NZS 1167.2:

R4.

AWS/ASME-SFA A5.18 :

ER70S-4

CHEMICAL ANALYSIS OF WIRE: (typical)

%C	%Mn	%Si	%S	%P	%Cr	%Cu	%Mo	%Ni
0.07	1.18	0.72	0.010	0.012	0.04	0.18	0.02	0.03

MECHANICAL PROPERTIES : (Typical)

YP MPa	UTS MPa	El %	Impact / CVN J @ -20C
406	514	38	88 J ave

D. Rizio
for and on behalf of CIGWELD Pty Ltd.

PART No: 321412	SIZE: 2.4mm	BATCH# : 18190	DATE: 31-Jan-19
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