

WELDING PROCEDURE APPROVAL TEST CERTIFICATE

2

3 *Manufacturer's Welding Procedure*4 *Reference No* DG0195 *Manufacturer:* GOW'S LYBSTER LTD6 *Address:* SCARABEN HOUSE
HILLHEAD
LYBSTER
CAITHNESS KW3 6ASInspecting Authority: Lloyds
Register EMEA

Reference No: ABN1105515

7 *Code/Testing Standard:*

BS EN288-3 Range of approval to BS EN ISO 15614-1:2004

8 *Date of Welding:*

10 May 2012

9 *RANGE OF
QUALIFICATION*10 *Welding Process:*

Manual TIG (141)wm

11 *Joint Type:*

FILLET WELDS

12 *Parent Metal Groups Sub Groups:*

8.1 & 8.2

13 *Parent Metal Thickness (mm):*

3mm - 114mm

Weld Metal Thickness (mm): Plate

3mm - 12mm

Weld Metal Thickness (mm): Bar

28.5mm - 114mm

Throat Thickness (mm):

N/A

Single Run/Multi Run:

SINGLE RUN

14 *Pipe Outside Diameter (mm):*

N/A

15 *Filler Metal Type/Designation:*

LNT 318SI(AWS A5.9 ER318

Filler Material Make:

N/A

Filler Material Size:

N/A

16 *Designation of Gas/Flux:*

99.99% Argon EN439/1

Designation of Backing Gas:

99.99% Argon EN439/1

17 *Type of Welding Current/Polarity:*

DC-ve

Mode of Metal Transfer:

N/A

Heat Input:

N/A

18 *Welding Position(s):*

2F/PB - DOWNHAND

19 *Preheat Temperature:*

5° C MIN

Post-Heating:

NONE

20 *Post Weld Heat Treatment:*

NONE

21 *OTHER INFORMATION*

SEE BS EN ISO 15614-1:2004

(1) ss,NB,GB,MB, BS,GG,NG

(2) see clause 8.4.3a BRANCH WELDS $\geq 60^{\circ}$ In our opinion the attached welding procedure approval is
considered to satisfy the intent of the technical
requirements of BS EN ISO 15614-1:2004
Reissued due to company name changeCertified that test welds were prepared, welded and tested
satisfactorily in accordance with the requirements of the code/testing
standard indicated above (Certified on Page 4)

1. **DETAILS OF WELD TEST**

- 2.
3. *Manufacturer's Welding Procedure*
4. *Reference No:* **DG019**
5. *Manufacturer:* **Gows Lybster Ltd**
6. *Address:* **Scaraben House
Hillhead
Lybster
KW3 6AS**
- 7.
8. *Welder's Name:* **Donald Miller**
- 9.
10. *Welding Process:* **TIG(141)wm**
11. *Joint & Weld Type:* **Single fillet on plate**

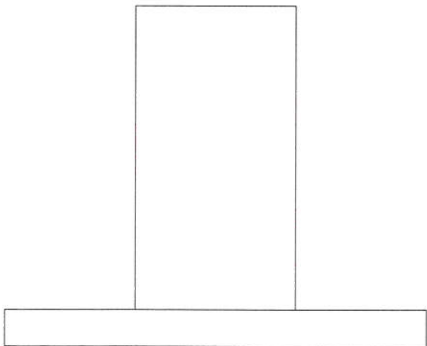
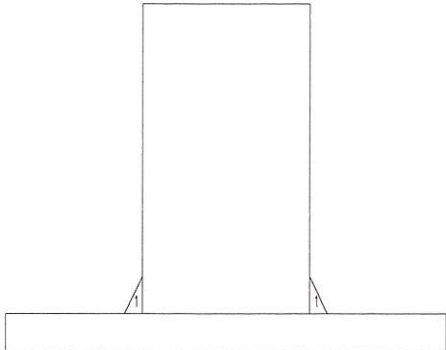
Inspecting Authority: **Lloyds Register EMEA**
Reference No: **ABN1105515**
Date of Welding: **26 March 2012**
Location: **GLL Workshop**
Method of Preparation: **Saw and Grind**

Parent Metal Specification: **Grade ASTM A182 F51 S31803 TO ASTM 240 304
(1.4307) TESTEED**

Parent Metal Thickness: **6 mm & 57mm**
Pipe Outside Dia: **N/A**

Test Piece/Welding Position: **2F/PB - DOWNHAND)**

Welding Procedure Specification (DG019)

Joint Design	Welding Sequences
 <p>57mm Diameter Bar welded onto a 150 x 150x 6mm square plate</p>	

Welding Details

Run	Welding Process	Size of Filler Material	Current Amps	Voltage V	Type of Current/Polarity	Wire Feed Speed	Heat Input*
1	TIG	2.4mm	160-180	12 - 14	DC-ve	Handfed/Manual	N/A

16. Filler Material Designation and Make:

17. Type, Designation, Trade name

LNT 318SI (AWS A5.9 ER318) ISO 14343-A W19 12 3 NBSI

18. Any Special Baking or Drying:

N/A

19. Gas/ Flux

ARGON 99.99%

20. Gas Flow Rate –

Shield

14 LPM

21. Backing

N/A

22. Tungsten Electrode Type/Size:

2.4mm, 2% THORATED TUNGSTEN

23. Details of Back Gouging/Backing:

N/A

24. Preheat Temperature:

5° C MIN

25. Inter-pass Temperature

150°C MIN

26. Post Weld Heat Treatment

NONE

27. Time, Temperature, Method

N/A

28. Heating and Cooling Rates

N/A

29. The above test piece was welded

D MORRISON

In the presence of:



Scaraben House, Hillhead, Lybster, Caithness, KW3 6AS

T: 01593 721585 F: 01593 721403 M: 07990 672433
E: info@gowslybster.co.uk W: www.gowslybster.co.uk

Inspectors	Contractor	Client	<p>Certifying Authority D. MORRISON</p> <p>Initials DM Lloyds Register EMEA Aberdeen Office</p> <p><i>[Signature]</i> 21/6/12</p>
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ASAMS

TEST REPORT

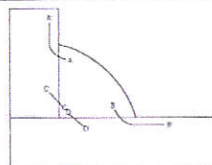
Client: Gows Lybster Ltd Scaraben House Hillhead Lybster Caithness KW3 6AS Contact: Peter Grigor	ASAMS Contract No. ASAMS/0017293
	Contract Issue Date 15/05/2012
	Client Order No. PO-MAY'12
Job Description: 57mm Dia Bar to 6mm Plate Fillet Weld Procedure Test PQR DG 019 Welder: D. Miller / Position: 2F/PB-Downhand Material: ASTM A182 F51 S31803, Cast: 172205 to ASTM A240 304L(1.4307), Cast: P9MG	
Specification: Clients Based On BS EN ISO 15614-1 (12)	

MACRO EXAMINATION / HARDNESS SURVEY

Tested to: BS EN ISO 6507-1 (05) / Test Type: Vickers Diamond Pyramid / Indenter: 136° Pyramidal Diamond Indenter / Load: 10kg (HV10)

Test Date: 16/05/2012 **6 & 9 o'clock Macros**
Examined To: As Above
Preparation: Acidic CuSo4-BSEN1321, ISO9015-1
Magnification: Up to 5x

Results: Both Macros showed full penetration and fusion with no inclusions, but a minor isolated gas pore noted in Macro 9 o'clock. Maximum hardness: 292HV10 at location (*)
(Due to absence of well defined HAZ, HAZ indentations are located within 3mm of fusion line). Note: Stainless on bottom side of macro. Hardness on 6 o'clock Macro. Throat Thickness: 3.5mm



Sentence : For Info.

A-A' @1mm	B-B' @1mm	C-C' @1mm	D-D' @1mm	A-B @1mm	C-D @1mm
H 262	H 177	H 260	H 182	W 201	W 232
H 251	H 180	H 260	H 182	W 207	W 216
H 251	H 183	H 253	H 186	W 201	W 219
@ 2mm	@ 2mm	@ 2mm	@ 2mm		
P 283	P 182	P 258	P 188		
P 292(*)	P 178	P 258	P 188		
P 292(*)	P 178	P 258	P 183		

Completed by R Bellward (Technician)
Verified by T Whiskin (Metallurgist)

Signed by A Page (Manager)
Report Date: 16 May 2012

ON BEHALF OF
ASAMS LIMITED



All test results are enclosed in boxes unless otherwise specified

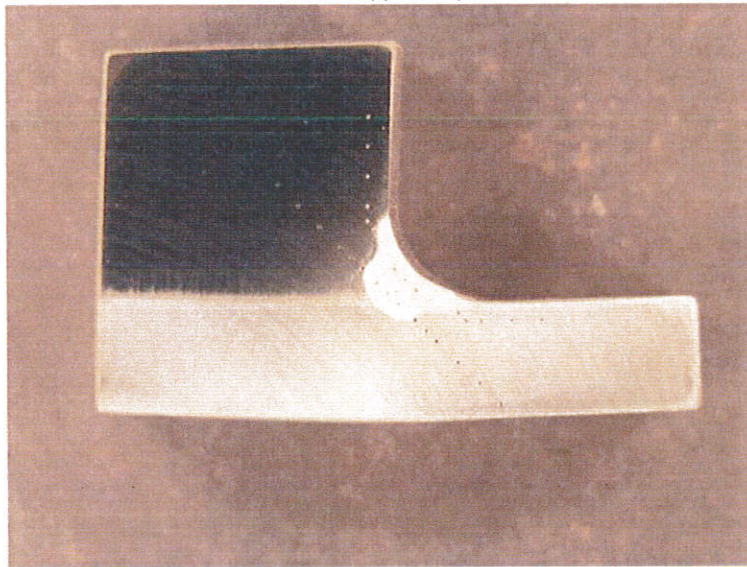


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PHOTOMACRO/MICROGRAPH

Approximate Magnification : x 2.6 / Etchant : Acidified Copper Sulphate / Tested to: ASAMS OP7 / Macro 6 o'clock



Completed by R Bellward (Technician)
Verified by T Whiskin (Metallurgist)

Signed by A Page (Manager)
Report Date: 16 May 2012

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