

WELDING PROCEDURE APPROVAL TEST CERTIFICATE

1
 2
 3 *Manufacturer's Welding Procedure*
 4 *Reference No* WP3
 5 *Manufacturer:* VARLOWE INDUSTRIAL SERVICES LTD
 6 *Address:* UNIT 16 REFLEX BUSINESS PARK
 WEDNESFIELD ROAD
 WILLENHALL
 WV131AH
 7 *Code / Testing Standard:* BS EN ISO 15614-1:2004 A1 2008
 8 *Date of Welding:* 05/01/2011
 9 **RANGE OF QUALIFICATION**
 10 *Welding Process:* MANUAL TIG (141)
 11 *Joint Type:* BUTT WELD (1) FILLET WELD (2)
 12 *Parent Metal Groups /Sub Groups:* 8.1
 13 *Parent Metal Thickness (mm):* 2.01mm - 5.74mm
Weld Metal Thickness (mm): 2.01mm - 5.74mm
Throat Thickness (mm): NO RESTRICTION (2.01mm-5.74mm MATERIAL THICKNESS)
Single run / Multi run: MULTI RUN
 14 *Pipe Outside Diameter (mm):* 13.35mm - 53.4mm
 15 *Filler Metal Type / Designation:* EN ISO 14343-A W19 12 3L
Filler Material Make: NO RESTRICTION
Filler Material Size: NO RESTRICTION
 16 *Designation of Gas / Flux:* ARGON 99.99% EN ISO 14175 I1
Designation of Backing Gas: NOT APPLICABLE
 17 *Type of Welding Current / Polarity:* DC-VE
Mode of Metal Transfer: NOT APPLICABLE
Heat Input: NO RESTRICTION
 18 *Welding Position(s):* ALL EXCEPT VERTICAL DOWN
 19 *Preheat Temperature:* 5°C MINIMUM
Post-Heating: NONE
 20 *Post Weld Heat Treatment:* NONE
 21 **OTHER INFORMATION** SEE BS EN ISO 15614-1:2004 A1 2008
 (1) ss,gb,mb,bs,gg,ng
 (2) SEE CLAUSE 8.4.3a

Inspecting Authority ZC/NWP/110055
Reference No. SS42526723/3

22 *Certified that test welds were prepared, welded and tested satisfactorily in accordance with the requirements of the code / testing standard indicated above.*

23 *Location:* BIRMINGHAM
Date of Issue: 17/01/2011

Name and Signature
 C DUFFELL
Inspecting Authority
 ZURICH
 SAFed/CEOC Member Company
 (CEOC Member Organization)
 ZURICH ENGINEERING Laboratory Services
 11 Bridge Street
 West Bromwich B70 0DE
 Tel: 0121 520 5868

Übersetzung des vorgedruckten
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DETAILS OF WELD TEST

Page 2 of 3

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6 **Address:** UNIT 16 REFLEX BUSINESS PARK
WEDNESFIELD ROAD

Inspecting Authority ZC/WP/110055
Reference No. SS42526723/3
Date of Welding: 05/01/2011
Location: WORKSHOP

7 **WILLENHALL**
WV131AH
8 **Welder's Name:** PAUL HAWKINS

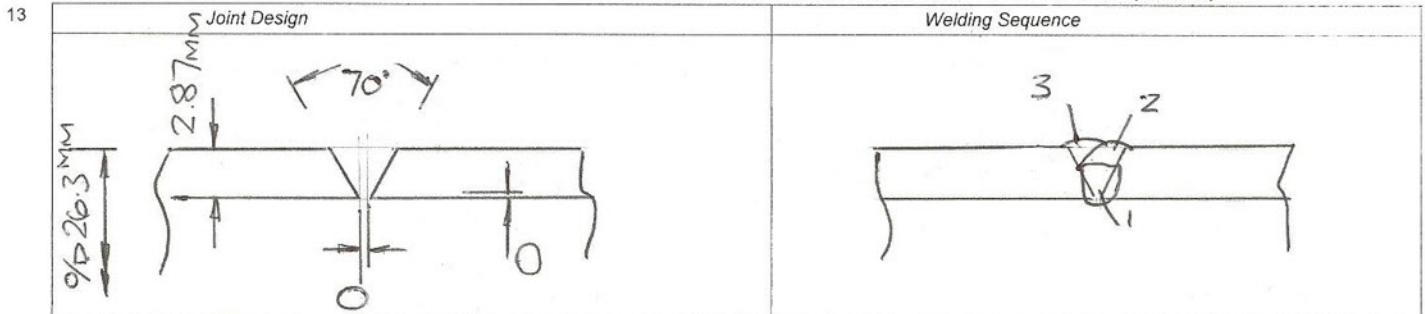
Method of Preparation and MACHINE, DEGREASE
Cleaning:

Parent Metal Specification: ASTM A240 TP316L

10 **Welding Process:** MANUAL TIG (141)
11 **Joint Type:** BUTT WELD IN PIPE

Parent Metal Thickness(mm): 2.87mm
Pipe Outside Diameter(mm): 26.3mm
Test Piece / Welding Position: INC 45° V-UP (H-L045)

12 **WELD PREPARATION DETAILS (Sketch)**



14 **WELDING DETAILS**

15

Run	Process	Size of Filler Metal	Current A	Voltage V	Type of Current and Polarity	Wire Feed / Travel Speed *	Heat Input *
1	TIG (141)	1.6mm	80-90	8-9	DC-VE	MANUAL / -	-
2	TIG (141)	1.6mm	75-80	8-9	DC-VE	MANUAL / -	-

16 **Filler Metal:**
17 **Type, Designation, Trade Name:** ESAB TIGROD OK 316 EN ISO 14343-A W19 12 3L
18 **Any Special Baking or Drying:** DRY STORAGE
19 **Gas / Flux:** ARGON 99.99% EN ISO 14175 I1
20 **Gas Flow Rate - Shield:** 10 LPM
21 **Backing:** N/A
22 **Tungsten Electrode Type / Size:** 2% THORIATED 2.4mm DIA
23 **Details of Back Gouging / Backing:** NONE/ss,nb
24 **Preheat Temperature:** 5°C MIN
25 **Interpass Temperature:** 150°C MAX

26 **POST WELD HEAT TREATMENT** NONE
27 **Time, Temperature, Method:**
28 **Heating and Cooling Rates *:**

29 **The above test piece was** C DUFFELL
welded in the presence of: ZURICH ENGINEERING

OTHER INFORMATION

ZURICH

Name and Signature A D EDWARDS
SAFed/CEOC Member Company

Inspecting Authority: Zurich Laboratory Services
204 Great Bridge Street
(CEOC Member Organization)
West Bromwich B70 0DE
ZURICH ENGINEERING
Tel: 0121 520 5868

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TEST RESULTS

Page 3 of 3

1
2
3 *Manufacturer's Welding Procedure:* Inspecting Authority ZC/WP/110055
4 *Reference No.* WP3 Reference No. SS42526723/3
5 *Visual Examination:* ACCEPTABLE Radiography *: ACCEPTABLE
6 *Penetrant Test ** ACCEPTABLE Ultrasonic Examination* : NOT APPLICABLE
7 *Tensile Tests :* EN ISO 6892-1 2009 Temperature: 20°C

Type / No.	Re N/mm ²	Rm N/mm ²	A %on	Z%	Fracture Location	Remarks
Requirement		415				
TRANSVERSE 1	-	584	-	-	25mm Clear of Weld	ACCEPTABLE
TRANSVERSE 2	-	579	-	-	33mm Clear of Weld	ACCEPTABLE

10 *Bend Tests:* EN 910:1996 Former Diameter: 4t

Type No.	Bend Angle	Elongation	Result
ROOT (X2)	180°	-	ACCEPTABLE
FACE (X2)	180°	-	ACCEPTABLE

*Fillet Fracture Test *:* NOT APPLICABLE

Macro Examination : (X1) ACCEPT:EN1321

13 *IMPACT TESTS *:* Type : Size : Requirement :

Notch Location / Direction	Temp. °C	Values	Average	Remarks
NOT APPLICABLE				

15 *HARDNESS TESTS *:*

16 *Type / Load* NOT APPLICABLE
17 *Values - Parent Metal*
18 - H.A.Z.
19 - Weld Metal

20 *OTHER TESTS* NONE

21 *REMARKS* FOR MACROPHOTOGRAPH SEE ADDENDUM 1

22 *Tests carried out in accordance with the requirements of :* BS EN ISO 15614-1:2004 A1 2008

23 *Laboratory Report Reference No* SS42526723/3

24 *Test Results Were* ACCEPTABLE

25 *Test carried out in the presence of:* A D EDWARDS
ZURICH ENGINEERING

27

ZURICH

Name and Signature SA OUFFELL Member Company

Zurich Laboratory Services
204, Great Bridge Street
West Bromwich B70 0DE
Tel: (0121) 520 5868
ZURICH ENGINEERING

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LABORATORY SERVICES REPORT

Date of Receipt: 05/01/2011

Our Ref. SS42526723/3 ADD 1

Client Ref.

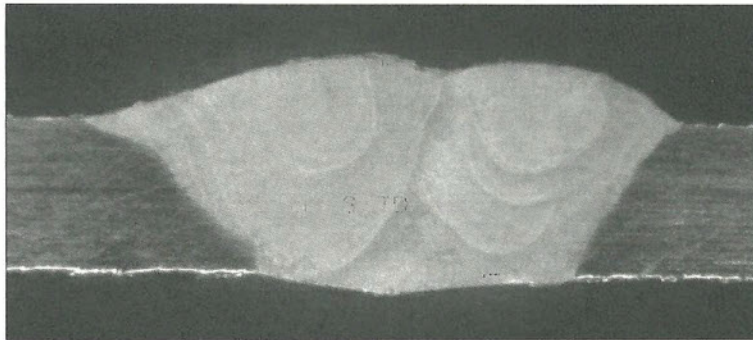
Report No. LSR110177

Manufacturers Name VARLOWE INDUSTRIAL SERVICES LTD
and Address UNIT 16 REFLEX BUSINESS PARK
WEDNESFIELD ROAD

Page 1 of 1

WILLENHALL
WV131AH

WELD PROCEDURE REF:- WP3
MACRO PHOTOGRAPH



Tested By J BROOMHALL

Date 12/01/2011

Signature 

Position WELDING ENGINEER

Date 24/01/2011

Signatory


C DUFFELL

For Zurich Laboratory Services.
Certified that the tests have been carried out in accordance with client instructions and
the quality requirements of Zurich Laboratory Services.

Laboratory services, 204 Great Bridge Street, West Bromwich B70 0DE.

Telephone: 0121 520 5868 Fax: 0121 520 5863

Zurich Management Services Limited, Registered in England no. 2741053.

Registered Office: The Zurich Centre, 3000 Parkway, Whiteley, Fareham, Portsmouth, Hampshire PO15 7JZ.