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WELDING PROCEDURE APPROVAL TEST CERTIFICATE

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MANUFACTURER'S WELDING PROCEDURE:
Reference No. Orbital Welder 2
Manufacturer: Metalock Engineering Ltd
Address: Unit H5
Pilgrims Walk
Prologis Park
Coventry
CV6 4QG

Inspecting Authority:
Project No.

Page 1 of 3
ZE/WP/AA/000630
LS21-1310

Code / Testing Standard: BS EN ISO 15613:2004
Date of Welding: 25/08/2021
RANGE OF QUALIFICATION:
Welding Process: Fully Mechanised MAG (135)
JointType: Build Up Welding (1)
Parent Metal Groups Sub Groups: 1.1, 1.2 (Re<=360 N/mm² - Minimum Specified)
Parent Metal Thickness (mm): 10.98 - 43.90
Weld Metal Thickness (mm): 11.8 Max
Throat Thickness (mm): Not Applicable
Single Run / Multi Run: Multi Run Only
Pipe Outside Diameter (mm): ≥ 84.15
Filler Metal Type / Designation: EN ISO 21952-A:G MoSi
Filler Material Make: No Restriction
Filler Material Size: All within Heat Input & Transfer Mode Restrictions
Designation of Gas / Flux: EN ISO 14175 M21 (CO² = 16% to 24%)
Designation of Backing Gas: Not Applicable
Type of Weld Current / Polarity: DC+ve
Mode of Metal Transfer: Dip
Heat Input: ±25% From Recorded Values
Welding Positions(s): Vertical-Down
Preheat Temperature: 30°C Minimum
Interpass Temperature: 290°C Maximum
Post Heating: With or Without Hydrogen Release
Post Weld Heat Treatment: None
OTHER INFORMATION: See BS EN ISO 15613:2004 & BS EN ISO 15614-1:2017+A1:2019 Level 2
(1) Limited to the type of Joint used in the Pre-Production Test.

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

Date of Issue:
17/09/2021



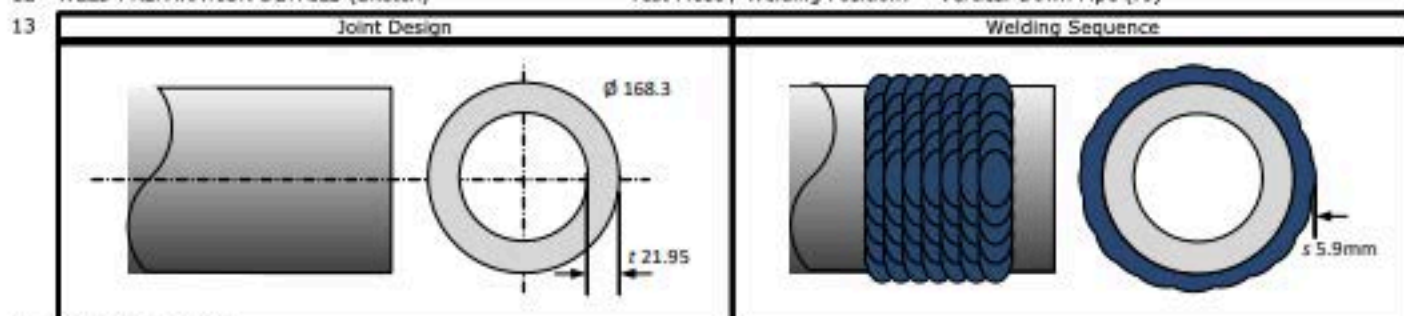
Übersetzung des vorgedruckten Formblatt-Textes auf der Rückseite Translation of printed text on the reverse side Traduction des rubriques imprimées au verso

Note: This is a Welding Procedure Qualification Record and is applicable to the named manufacturer alone. This qualification is not a Standard Welding Procedure and may not be reproduced in whole or part and used as such.

DETAILS OF WELD TEST

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3 **Manufacturer's Welding Procedure:** Inspecting Authority: ZE/WP/AA/000628
4 **Reference No.:** Orbital Welder 2 Reference No. LS21-1310
5 **Manufacturer:** Metalock Engineering Ltd Date of Welding: 25/08/2021
6 **Address:** Unit H5 Location: Workshop
Pilgrims Walk
7 Prologis Park
Coventry
CV6 4QG
8 **Welders Name:** Graham Gibson
9
10 **Welding Process:** Fully Mechanised MAG (135) Parent Metal Thickness (mm): 21.95
11 **Joint Type:** Build Up Welding Pipe Outside Diameter (mm): 168.3
12 **WELD PREPARATION DETAILS (Sketch):** Test Piece / Welding Position: Vertical-Down Pipe (PJ)



14 **WELDING DETAILS**

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Run	Process	Size of Filler Metal	Current A	Voltage V	Type of Current and Polarity	Wire Feed / Travel Speed	Heat Input
Layer 1 1 - 22	135	1.2mm	138 - 155	16 - 18	DC+ve	3.5m/min / 4.4mm/sec	0.5kJ/mm
Layer 2 23 - 44	135	1.2mm	139 - 169	15 - 16	DC+ve	3.5m/min / 2.7mm/sec	0.7kJ/mm

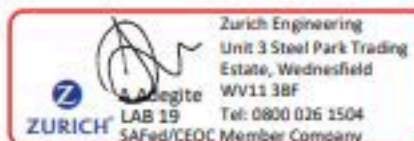
16 **FILLER METAL:**

17 **Type, Designation, Trade Name:** Solid Wire, EN ISO 21952-A:G MoSi, Bohler DMO-IG
18 **Any Special Baking or Drying:** Stored in Accordance with Manufacturers Recommendations
19 **Gas / Flux:** EN ISO 14175-M21-ArC-20
20 **Gas Flow Rate - Shield:** 25 L.P.M
21 **Backing:** Not Applicable
22 **Tungsten Electrode Type / Size:** Not Applicable
23 **Details of Back Gouging / Backing:** Material Backed
24 **Preheat Temperature:** 80°C Minimum Recorded
25 **Interpass Temperature:** 240°C Max Recorded Between Runs
26 **POST WELD HEAT TREATMENT:** None
27 **Time, Temperature, Method:** -
28 **Heating and Cooling Rates:** -

OTHER INFORMATION

K = 0.8 For MAG (135) From ISO/TR 17671-1
Welding Equipment: Bug & Band
11mm Oscillation width
Remote Visual Control

29 The above test piece was welded in the presence of: T Adegite
30 Zurich Engineering
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Übersetzung des vorgedruckten
Formblatt-Textes auf der Rückseite

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side

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