Ocks Engineering

- COMPANY PROFILE

WHO ARE WE ?

- ***Ocks Engineering kicked off with operations 03 September 2020.***

- We began rendering our services to small local business as we had only employed a small team and had minimum tools equipment and resources.
- During 2020 – 2021, Ocks Engineering was fortunate to be awarded with projects at PPC De Hoek ,Kathu Solar Energy Plant and later moved over to Tshipi Borwa Mine.
- During 2022 – 2023,we were astonished by the growth and huge achievements we have attained from projects completed at Sieshen Moolman yard and we are still growing.

Our Services

- Specialized Welding
- Fabrication Services
- Contract Manufacturing
- Lifting and Rigging Services

We comply to quality management systems

ISO 9001 :2015 and ISO 14001

- Welding Procedure for 2” Pipe
- Welding Procedure For Plate Weld 5mm to 32mm
- All Welders are Qualified
- Welding Procedure / OEM AWS

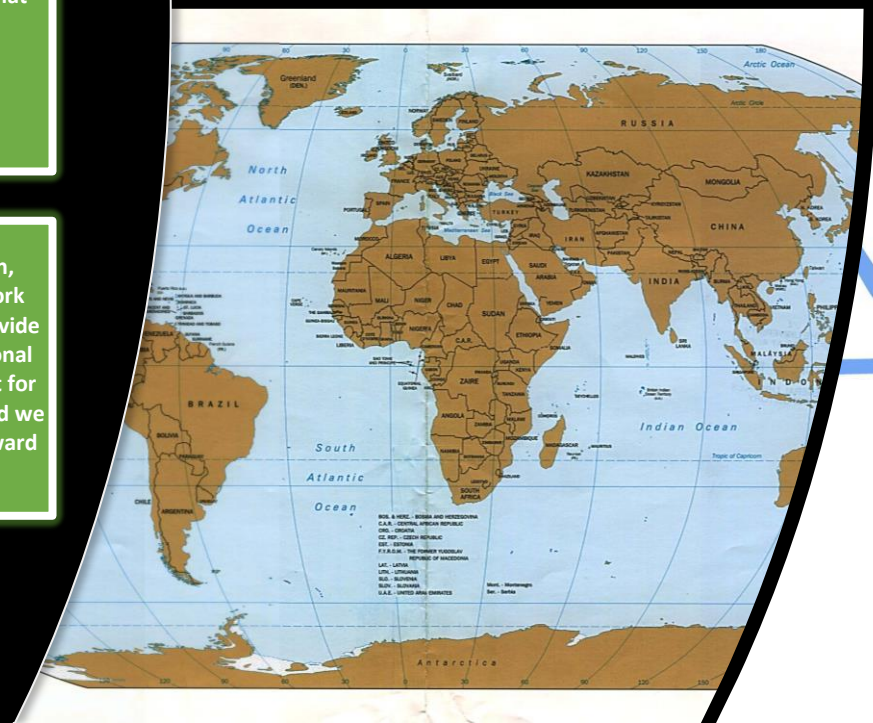
Engineering Industry

Ocks Engineering prides itself on operational excellence, which can be directly attributed to our highly competent and diverse workforce.

We are supported by local-based teams that include safety, quality and technical professionals.

We work hard to ensure we recruit the right person for the job, and through our individual performance management processes evaluate and develop the capability and competence of our people.

Our core values of excellence, innovation, integrity, leadership, respect and teamwork underpin the way we work together to provide our clients with efficient and safe operational services. We value our employees, not just for what they do, but for the way they do it and we demonstrate our appreciation through reward and recognition schemes.



- • **Safety**
- We are committed to maintaining a safe and healthy environment in all our offices and on each of our projects.
- • **Quality**
- We are committed to providing high-quality commercial mechanical and marine services and strive for continuous improvement of our work.
- • **Self-Regulation**
- We are committed to comply with all mutually agreed project specific requirements
- • **One Team**
- A company of teamwork spirit; we put the team ahead of our personal success and commit to building its capability.
- • **Customer Focus**
- We ensure that customer requirements are understood and those are met. Top Management monitors and measures customer satisfaction and keeps pace in enhancing customer satisfaction level by providing Quality services on targeted delivery time

Zero Harm , Zero Accidents

Our commitment is always to achieve Zero accidents by working safely .

Our QHSE Policy & Strategic Objectives

The Management of Ocks Engineering places the utmost emphasis on Safety of Human Life and Protection of the Natural Environment. These concerns must "ALWAYS" take precedence over all commercial considerations.
The company's main principles, goals and objectives:

At all times Ocks Engineering will conduct operations in compliance with Best Practice Standards and Health and Safety Regulations

Continuously improvement in safety management skills, including preparing for emergencies related both to Safety, Health and Environmental protection

Provision of safe practices and a safe system of work

Controlling occupational health hazards in our activities

Establish safeguards against all identified risks

Placing emphasis on human development and training Our employees as well as partners, contractors and their employees are ALWAYS required to comply with our Policy, Procedures and Work Instructions. We must all take the 6 necessary precautions to protect ourselves, our colleagues, work sites, equipment and the environment.

COMPANY ORGANOGRAM

16(1)

CEO

ESLENE OCKS

16(2)	CR 8(7)	CR 8(5)	
DIRECTOR	SUPERVISOR	HEALTH AND SAFETY OFFICER	QUALITY MANAGER
SELAIMAN OCKS	YUSUF MANUEL	JEANINE CARELSE	ALEX KNUTSEN

Our MISSION
Provide modern, innovative and sustainable solutions to all our clients in the Engineering Industry.

To Create Job Opportunities for local labor and growth through training for the youth.

CONTACT REFERENCES

PPC DE HOEK	**Richard Barry** **Site Manager** **083 680 7692**
PPC DE HOEK	**Morne Wyngaard** **Site Forman** **072 449 6530**

CONTACT REFERENCES

Sishen Moolmans Yard

- **Johan Potgieter**
- **072 610 7734**

Tshipi Borwa Mine

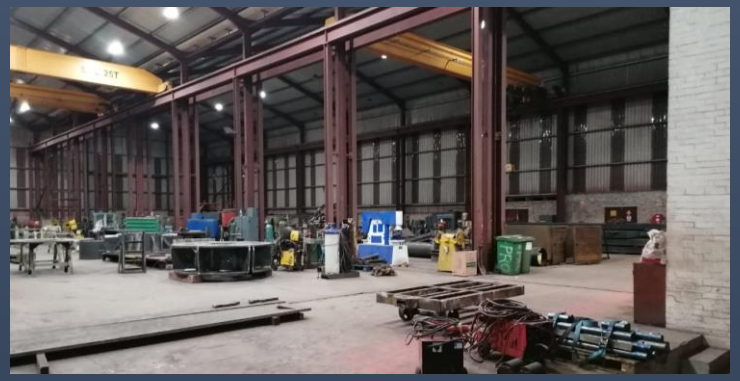
- **Werner**
- **072 508 4667**

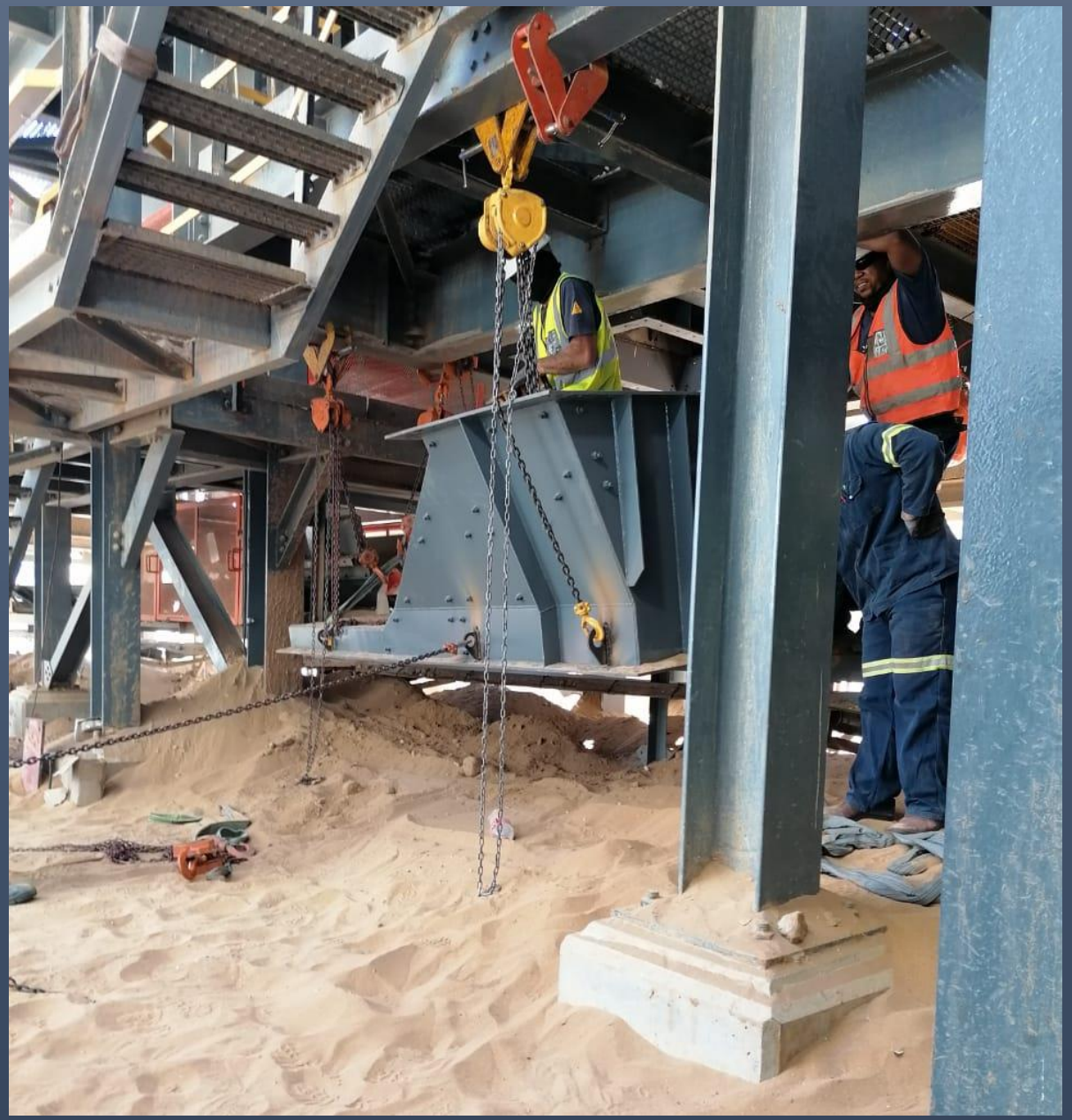
Kathu Solar Plant (Energy)

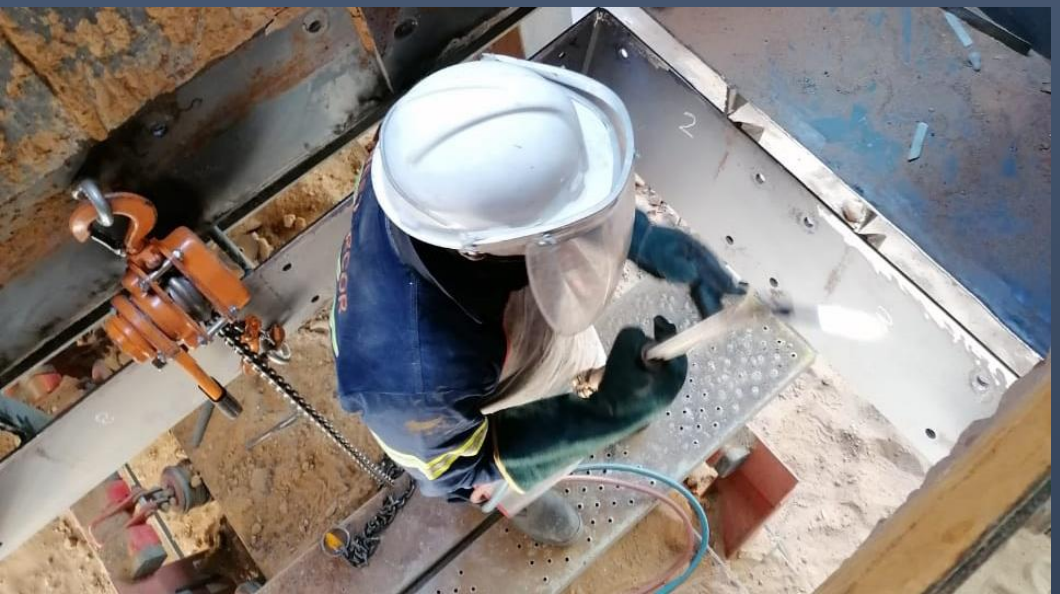
- **Bernard Ockhuis**
- **083 230 3688**

JOIN US THROUGH OUR PICTURE JOURNEY

by OCKS ENGINEERING

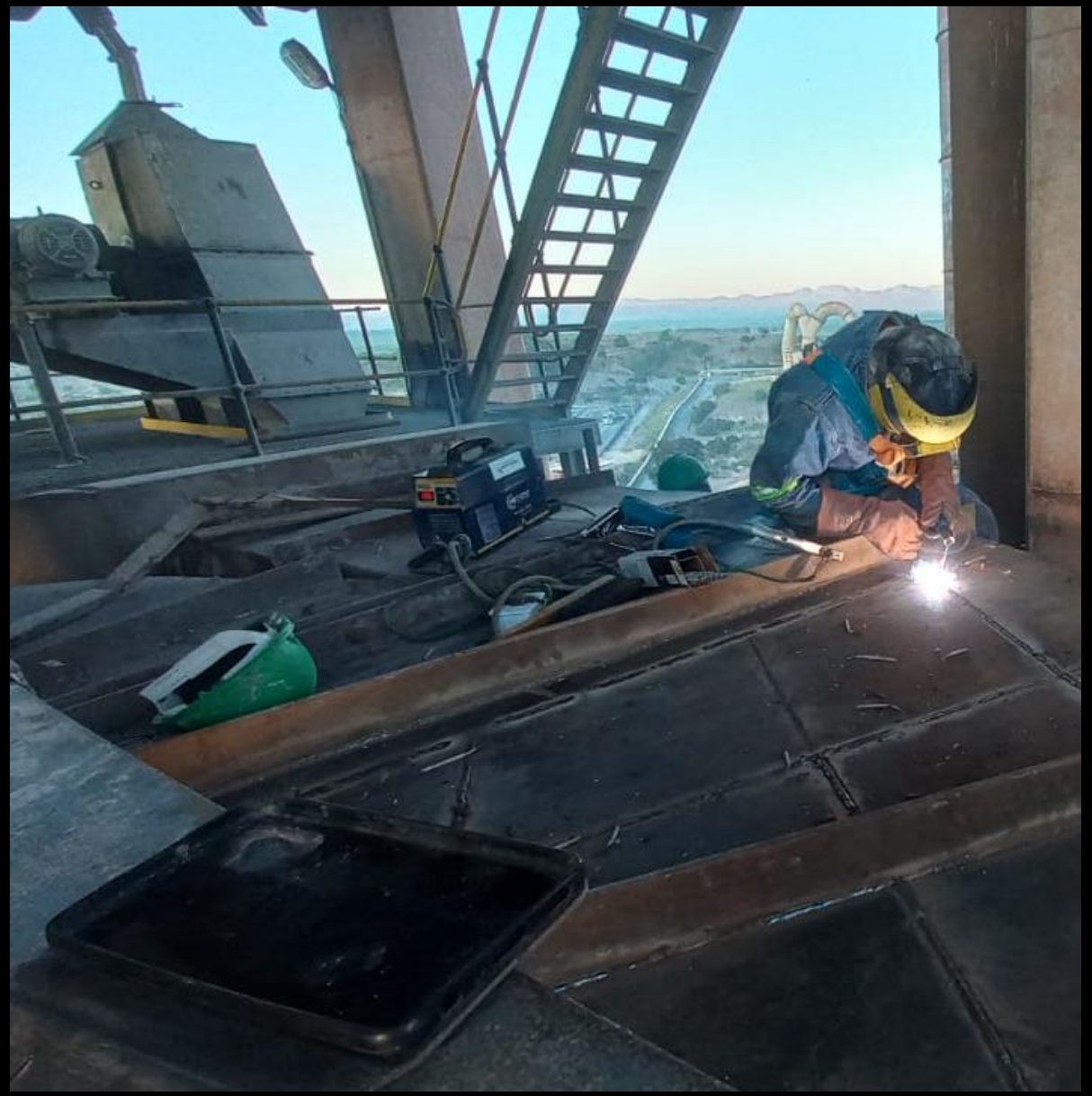







BLASTRITE


TOYOTA
HILUX
Ocks Engineering
TYPES OF WELDING
CR 19686

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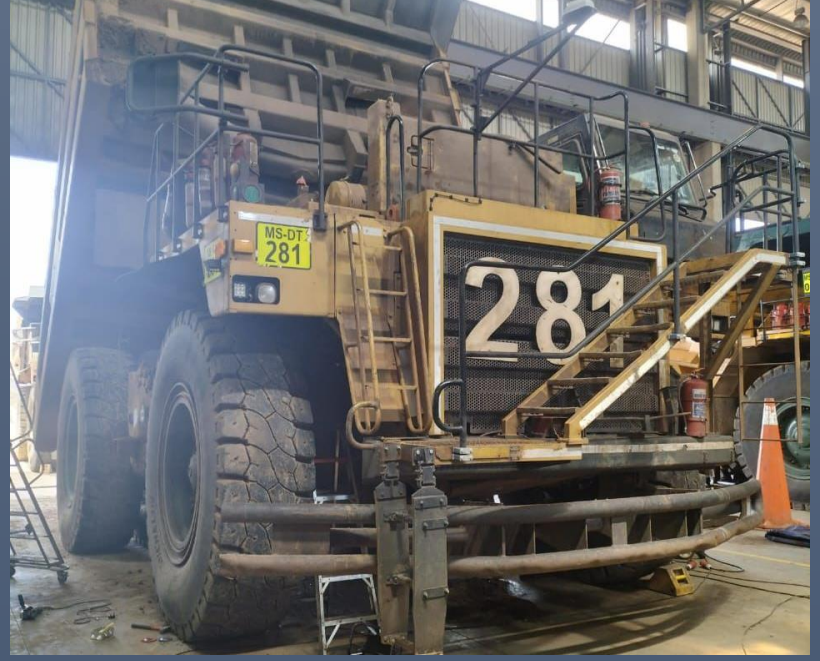
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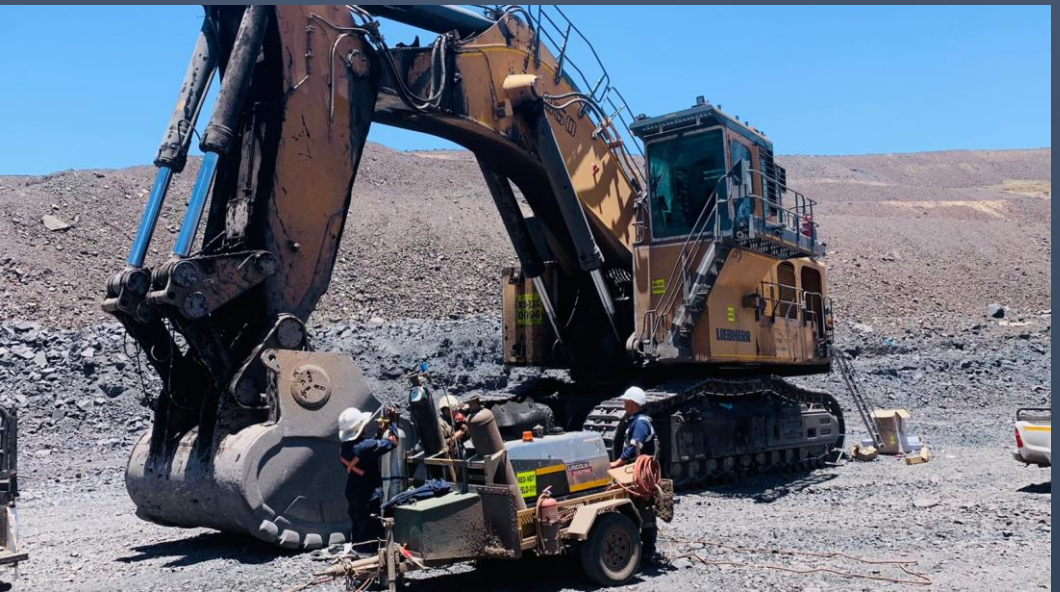
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MOOLMANS

Quality Management Systems
ISO 9001 of 2015 and ISO 14001

Red Earth NDT (PTY) Ltd

Non-destructive Testing Since 2021

Reg no: 2021/132401/07
Vat no: 4590305928

P.O. Box 101
Springbok
8240

E-mail: Redearthndt@yahoo.com
Cell: 0828899884

49 Tweelingvygie Cresent
Kathu
8446

MPI REPORT 284

Inspection visit Report 614

Date of examination	25-29/10/2022	Client	Moolmans
Job Type	MS-RDT-170 Komatsu 785 Chassis Repair Hrs:42 488	Place of Examination	Tshipe N'tle Mine Site
Magnetic Particle Method	Visible wet Continuous	Consumables	Ardrox 800/3 Black Magnetic ink Ardrox 8903W White Background
Current Flow	AC	Current	1.5 amps
Yoke	Model: Ky-2 S/N: 220079 200V	Field Strength	4.5 Kg Lifting Block
Extent of Examination	100% of weld + 25mm Randomly Selected	Either side of weld in	Heat affected zone [HAS]

Surface Condition	As Welded
Pre-Cleaning Method	Wire Brush
Surface Temp	28°C , 1200 Lx
Yoke spacing	50-110mm
Yoke Location	2 x 90° Criss-cross
Acceptance	AWS D1.1
Test Limitations	None
Test Procedure	RED-P-MT-001

Examination Results

Rework Welding was done on MS-RDT-170 Komatsu 785. 2x Cracks were noted Gouged out + 2x insert was replaced. After gouge work commenced MPI inspection was done to ensure there are no relevant rejectable indications left before rework welding started. All welded areas were pre heated and tested with calibrated thermometer before welding started. After welding was complete all welding was visually inspected followed an MPI Inspection.

No Relevant indication was noted at time of inspection. See Pictures Below

..... Report issued by Andre Jacobs **MT 13/048/SNT**	25-29/10/2022 Date

MS-RDT-170
Komatsu 785

Inspection Results

Rework Welding was done on MS-RDT-167 Komatsu 785. 2x Cracks were noted Gouged out + 2x insert was replaced. See Pictures Below

After gouge work commenced MPI inspection was done to ensure there are no relevant rejectable indications left before rework welding started. All welded areas were pre heated and tested with calibrated thermometer before welding started.

1x Relevant Rejectable Indication were noted in root were grind out rewelded and retested. Photo 4,5,6

-Coded Welders Performed Rework Welding

- Yusuf Manuel
- Wesley Roberts
- Ryno Fergoson
- JC Carstens

After welding was complete all welding was visually inspected followed an MPI Inspection.

No Relevant indication was noted at time of Final inspection. See Pictures Below

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

Photo 12

Photo 13

Photo 14

Photo 15

..... Report issued by Andre Jacobs **MT 13/048/SNT**	25-29/10/2022 Date

Inspection Results

Rework Welding was done on MS-RDT-274 Komatsu 785. 10x Cracks were noted Gouged out.
After gouge work commenced MPI inspection was done to ensure there are no relevant rejectable indications left before rework welding started.

Welded areas were pre heated and tested with calibrated thermometer before welding started.

-Coded Welders Performed Rework Welding

- JC Carstens
- Ryno Loubsher

After welding was complete all welding was visually inspected followed an MPI Inspection.
No Relevant indication was noted at time of inspection. Accepted
See Pictures Below

Photo 1

Photo 2

Photo 3

Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

Photo 9

Photo 13

Photo 14

Photo 15

Photo 19

Photo 20

Photo 21

Red Earth NDT (PTY) Ltd

Non-destructive Testing Since 2021

Reg no: 2021/132401/07
Vat no: 4590305928

P.O. Box 101
Springbok
8240

E-mail: Redearthndt@yahoo.com
Cell: 0828899884

49 Tweelingvygie Cresent
Kathu
8446

MPI REPORT 286 **Inspection visit Report 619**

Date of examination	1-4/11/2022	Client	Moolmans
Job Type	MS-RDT-274 Komatsu Chassis Repair HRS: N/A	Place of Examination	Kathu Yard
Magnetic Particle Method	Visible wet Continuous	Consumables	Ardrox 800/3 Black Magnetic ink Ardrox 8903W White Background
Current Flow	AC	Current	1.5 amps
Yoke	Model: MY-2 S/N: 2205015 200V	Field Strength	4.5 Kg Lifting Block
Extent of Examination	100% of weld + 25mm	Either side of weld in	Heat affected zone [HAS]

Surface Condition	As Welded
Pre-Cleaning Method	Wire Brush-Remove Paint Stripper
Surface Temp	24°C , 1200 Lx
Yoke spacing	50-110mm
Yoke Location	2 x 90° Criss-cross
Acceptance	AWS D1.1
Test Limitations	None
Test Procedure	RED-P-MT-001

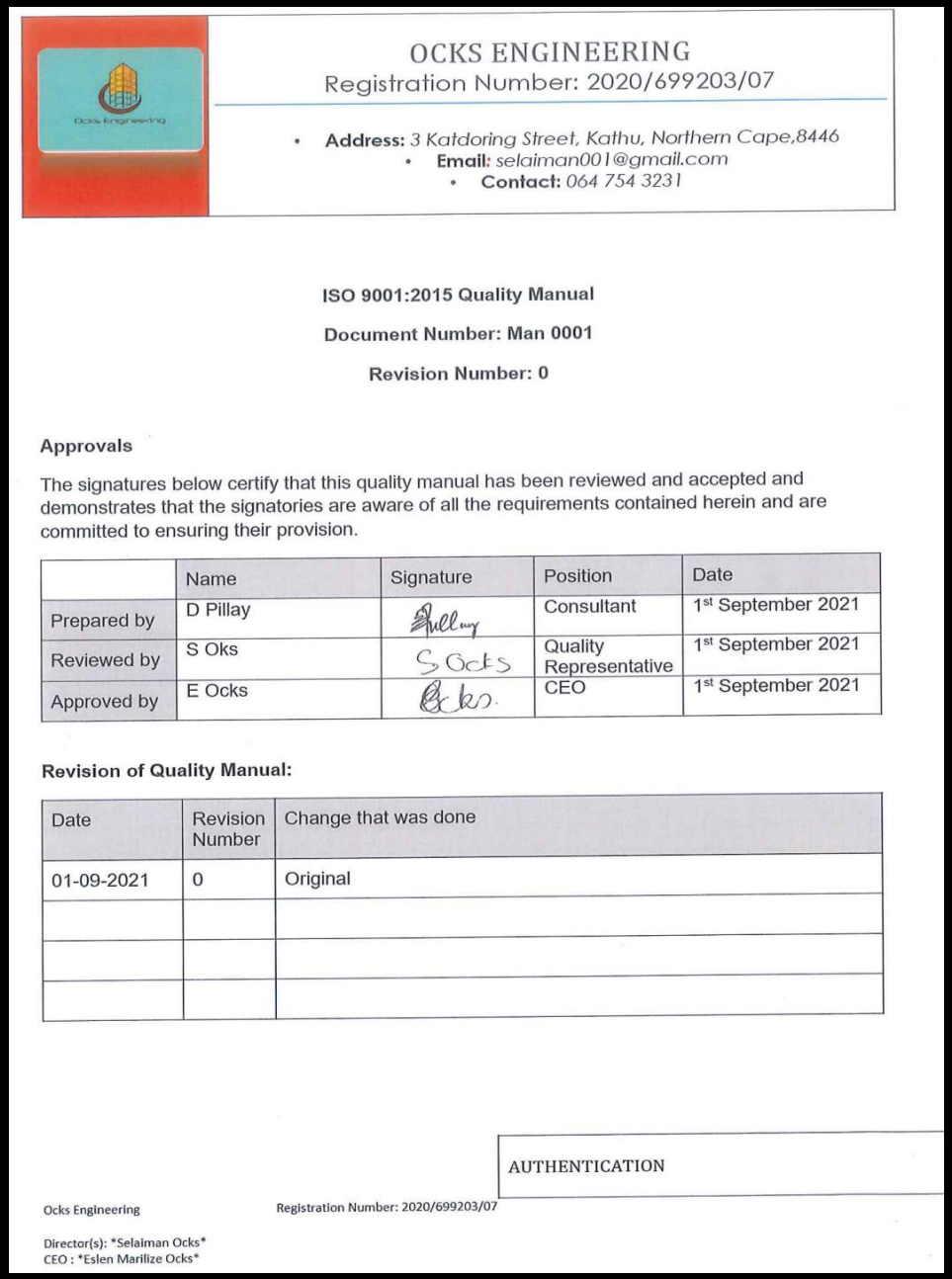
Examination Results

See Report Below

..... Report issued by Andre Jacobs **MT 13/048/SNT**	1-4/11/2022 Date

MS-RDT-274
Komatsu 785

- **ISO 9001: 2015 QUALITY MANUAL**



OCKS ENGINEERING
Registration Number: 2020/699203/07

- **Address:** *3 Katdoring Street, Kathu, Northern Cape,8446*
- **Email:** *selaiman001@gmail.com*
- **Contact:** *064 754 3231*

ISO 9001:2015 Quality Manual

Document Number: Man 0001

Revision Number: 0

Approvals

The signatures below certify that this quality manual has been reviewed and accepted and demonstrates that the signatories are aware of all the requirements contained herein and are committed to ensuring their provision.

	Name	Signature	Position	Date
Prepared by	D Pillay		Consultant	1st September 2021
Reviewed by	S Oks		Quality Representative	1st September 2021
Approved by	E Ocks		CEO	1st September 2021

Revision of Quality Manual:

Date	Revision Number	Change that was done
01-09-2021	0	Original

AUTHENTICATION

Ocks Engineering Registration Number: 2020/699203/07

Director(s): *Selaiman Ocks*
CEO : *Eslen Marilize Ocks*

OCKS ENIGEERING HAS WELDING PROCEDURES

FOR

PIPE AND PLATE WELDING

OCKS ENGINEERING	WELDING PROCEDURE SPECIFICATION	RBI TECH Issued by

P.O. No.:	Item:
Ref.:	Item No.:

General

Manufacturer	: OCKS ENGINEERING		
WPS No.	: OE 001/W Rev. 0	Support PQR's:	(1) OE 001/P Rev. 0
Revision	: 0		(2)
Code/Test Standard	: ASME IX 2019	Date:	2021-04-21

Base Metals (QW403)

Material 1	: ASTM A249 Tp 321	Group No.:	P8 Grp 1
Material 2	: ASTM A249 Tp 321	Group No.:	P8 Grp 1
Thickness	: 2.4 to 2.4 mm	Diameter:	All practical diameters
Thickness Range	: 1.5 to 4.8 mm	Fillet Sizes:	N/A
Other	: None		

Filler Metals (QW 404)

Process	: GTAW
Process Type	: Manual
Filler Specification	: SFA 5.9
Filler Classification No.	: AWS ER347
Filler F Number	: F6
Filler A Number	: A8
Filler Size	: 1.6 mm
Filler Added	: Yes
Consumable Insert	: None
Filler Metal Product Form	: Solid
Flux-Wire Class	: N/A
Flux Trade Name	: N/A
Backing	: None
Weld Deposit Thickness	: 4.8 mm max.

Preheat (QW 406)

Preheat Temperature	: 16°C minimum
Preheat Method	: None
Temperature Check	: Digital Thermometer / Tempilstick
Interpass Temperature	: 202°C maximum
Heat Area	: None
Preheat Maintenance	: None

Gas (QW408)

Type	: Single - AWS A5.32 SG-A
% Composition	: 99.99% Argon - G-11.1 Grade C
Flow Rate	: 10-14 liter per minute
Trailing Gas	: None
Backing Gas	: 99.99% Argon - G-11.1 Grade C
Flow Rate	: 4-6 liter per minute

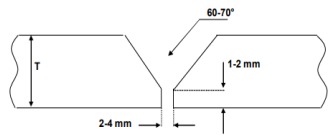
Joints (QW 402)

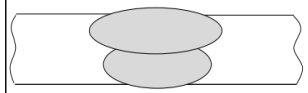
Prep. Method	: Cut and grind / Machine
Initial Clean	: As grind / machine
Retainers	: None

Pass & Location Sequence (QW405)

Max. Run Thickness	: GTAW 1.5 mm max.
Gouge Method	: None
Interpass Clean	: Grind & wire brush

Joints





GTAW As required

Electrical Characteristics (QW 409)

Pulsing I	: DC Power Source used - non pulsing	I & E Range	: Nonwaveform / DC Power Source

Process	Pass No.	Consumable Type	Filler Size (mm)	Weld Position	Amps (A)	Volts (V)	Speed (cm/min)	Prog.	I Type/ Polarity	Heat Input (Max) KJ/mm	Other
GTAW	As required	ER347	1.60	All positions	48-55	7-10V	Manual	Uphill	DC -ve	0.52	Non-pulsing

- **PIPE PROCEDURE QUALIFICATION RECORD**

OCKS ENGINEERING — PROCEDURE QUALIFICATION RECORD

.. No.: Item:
Item No.:

General

...cturer	: OCKS ENGINEERING		
	: OE 001/P Rev. 0	WPS:	OE 001/W Rev. 0
...1)	: P. Luskamp	WPS Revision:	0
...umber	: 851216 5090 08 1	WPS Date:	2021-04-21
	: None		
...ber	: N/A	Date:	2021-04-21
...Standard	: ASME IX 2019		

Base Metals (QW 403)

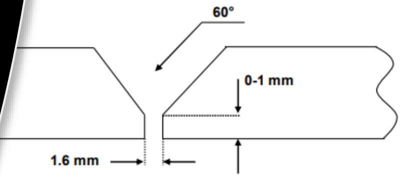
	: ASTM A249 Tp 321	Group No.:	P8 Grp 1
	: ASTM A249 Tp 321	Group No.:	P8 Grp 1
	: 2.4 to 2.4 mm	Diameter:	80.4 mm O/D
	: GTAW-None	Backing Type:	N/A

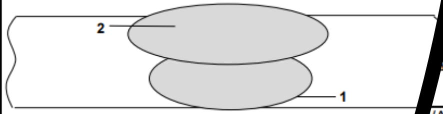
Welding Consumables (QW 404)

	: GTAW
	: Manual
	: SFA 5.9
...n No.	: AWS ER347
	: F6
...hem.	: A8
	: 1.6 mm
	: Yes
	: None
...orm	: Solid
	: Afrox ER347
	: None
	: None
	: 2.4 mm

...& Interpass Temperature (QW 406)		Shielding & Backing Gas (QW 408)	
...e	: 22°C minimum	Type	: Single - AWS A5.32 SG-A
	: None	% Composition	: 99.99% Argon - G-11.1 Grade C
	: Contact Thermometer	Flow Rate	: 12 liter per minute
...ure	: 114°C maximum	Trailing Gas	: None
	: N/A	Backing Gas	: 99.99% Argon - G-11.1 Grade C
	: N/A	Flow Rate	: 5 liter per minute

...W402) Single vee groove weld		Pass & Location Sequence	
...d	: Cut and ground	Max. Run Type	: GTAW 3.0 mm max.
	: As ground	Gouge Method	: None
	: None	Interpass Clean	: Wire brushed & Ground





Run 1 and 2 GTAW

Electrical Characteristics (QW 409)

...l : DC Power Source used - non pulsing | I & E Range : Nonwaveform used

...cess	Pass No.	Consumable Type	Filler Size (mm)	Weld Position	Amps (A)	Volts (V)	Speed (cm/min)	Prog.	I Type/ Polarity	Heat Input (Max) KJ/mm
...GTAW	1 and 2	ER347	1.60	F/H/V/OH (6G)	51.4-51.7	7.7-9.1V	5.1-7.6	Uphill	DC -ve	0.52

OCKS ENGINEERING — PROCEDURE QUALIFICATION RECORD

RBI TECH Issued by:

...No.: Item:
Item No.:

Welding Technique (QW 410)

...ltiple Arc	: Single Arc	Electrode Spacing	: None
...ti Pass	: Multipass	Transfer Mode	: N/A
...ded	: One sided weld	Oscillation	: N/A
...e Bead	: Weave 9 mm max.	Peening	: None
	: 11 mm I/D	Closed/out of Chamber	: N/A
...hed Slag	: N/A	Tungsten Type	: EWTh 2
...esses	: Grinding	Tungsten Size	: 2.4 mm

Post Weld Heat Treatment (QW 407)

	: N/A	Cooling Rate	: N/A
...ature	: N/A	Method	: N/A
	: N/A	Other	: No PWHT

Non-Destructive Examination (Ref)

	: 100 % Acceptable RT WC21/02/25/1
	: None
...MT)	: None
...)	: None
	: 100 % Acceptable both sides to ASME IX: QW 194

Destructive Testing

QW 460 (SGS Metlab 21-1165A)

...ss	Width (mm)	Area (mm^2)	Gauge mm	Yield load kN	Max load kN	Extension mm	UTS Mpa	Yield point $R_{p0.2}$ MPA	Elongation %	Fracture Location
	19.09	42.79	50.00	13.44	27.19	20.65	635	314	41%	Parent Metal
	19.03	37.33	50.00	12.66	25.17	15.45	674	339	31%	HAZ 1

...st: None

...er	Area (mm^2)	Ultimate Load (KN)	Tensile Strength (Mpa)	Yield Strength (Mpa)	0.2 % Proof Stress (Mpa)	Elong %	Gauge Length (mm)	Reduction in area %

...(SGS Metlab 21-1165A) **Bend Angle:** 180° **Former Size:** 9.6 mm

	Result	Type	Results
...62.3(a)	No visible defects	Root bend 1 QW 462.3(a)	No visible defects
...62.3(a)	No visible defects	Root bend 2 QW 462.3(a)	No visible defects

None | N/A | **Test Temp.** N/A

...n	Impact Strength (J)				Lateral Expansion			Shear Fracture %		
	(1)	(2)	(3)	Ave	(1)	(2)	(3)	(1)	(2)	(3)

...A

...IA

...Fracture:	N/A	Macro Examination :	None
...es :	1 Off	Penetration in Parent Metal:	Acceptable

Remarks

...ertify that the test welds were prepared, welded and tested satisfactorily to the best of our ...wledge in accordance with the requirements of the code / testing standard indicated above.

MANUFACTURER	CERTIFIED BY
	2021-04-21

sanas

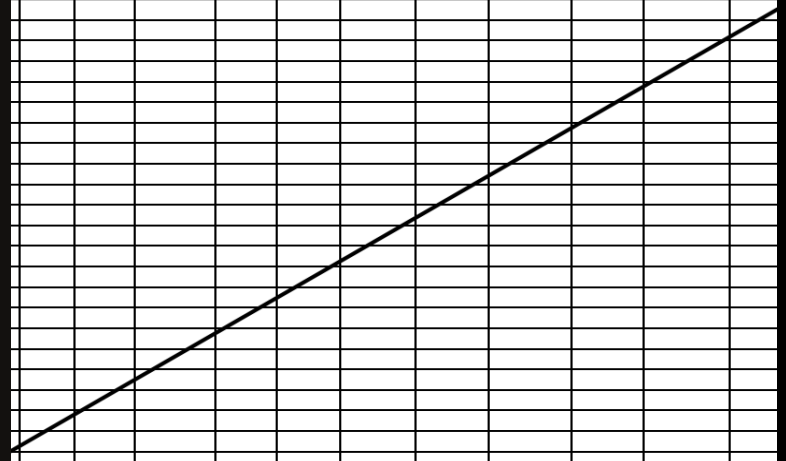
- PIPE WELDING PROCEDURES SPECIFICATONS

PARAMETER RECORD SHEET

Item:
Item No.:

: **Ocks Engineering**
: Yusuf Manuel — **Identity No.:** 940831 5123 089 — **Stamp No.:** OE0
: OE/002G - GTAW — **Date:** 19/07/2022 — **Shop/Field:** Shop
: AWS D1.1 - 2020

Elec. No.	Size (mm)	Length (mm)	Volts (V)	Amps (A)	R.O.L. (mm)	R.O.T. (Secs)	Stub Length (mm)	R.O.R.	Weld Speed (cm/min)	Heat (kJ/
Side 1										
1	2.40	0	16	134	65	109	0	0.00	3.6	3.
1	2.40	0	15	140	155	137	0	0.00	6.8	1.
2	2.40	0	14	141	90	88	0	0.00	6.1	1.
2	2.40	0	13	131	90	102	0	0.00	5.3	1.
3	2.40	0	13	134	40	39	0	0.00	6.2	1.
4	2.40	0	15	168	280	261	0	0.00	6.4	2.
5	2.40	0	13	155	120	97	0	0.00	7.4	1.
5	2.40	0	15	188	185	145	0	0.00	7.7	2.
6	2.40	0	14	194	210	204	0	0.00	6.2	2.
Side 2										
7	2.40	0	13	139	400	272	0	0.00	8.8	1.



W
ual

Manufacturer
Signature:
Date:

Inspection Authority
Signature:
Date: 01/09/2022

LVU

No.: GR15272 — Page 5 of 11 — Procedure No.: OE/001F.A1 R

WELDING PROCEDURE SPECIFICATION

.O. No.:
ef.:
Item:
Item No.:

General

anufacturer	: **Ocks Engineering**	Support PQR's:	(1) OE/
PS No.	: OE/001F/W Rev.0		(2) OE/
evision	: 0		(3) OE/
ode/Test Standard	: AWS D1.1 - 2020	Date:	19/07/2

Base Metals

aterial 1	: EN10025-2 S355JR+AR	Group No.:	EN10025
aterial 2	: EN10025-2 S355JR+AR	Group No.:	EN10025
hickness	: 6.0 to 6.0 mm	Diameter:	Equal o
hickness range	: 3.0mm to 12.0mm		
ther	: CJP groove weld qualify all PJP groove welds, Fillet welds and all Plug and S		

Filler Metals

rocess	: GTAW
rocess Type	: Manual
iller Specification	: SFA 5.18 only
iller Classification No.	: ER70S-6 only
iller Composition	: C/Mn/Si
iller metal diameter	: 2.40mm only
onsumable Backing	: None
lux Type	: N/A
ons. Insert/Retainer	: N/A
acking	: With Backing only
rocess Thickness	: 12.0mm Max

Preheat

reheat Temperature	: 25°C minimum
eat Method	: None
emperature Check	: Contact Thermometer
nterpass Temperature	: 100°C maximum
eat Area	: HAZ and Weld prep
.H. Maintenance	: N/A
ther	: None

Gas

Type	: Carbon
% Composition	: 100% C
Flow Rate	: 12-22.5
Orifice Size	: 15 mm
Trailing Gas	: None
Backing Gas	: None
Flow Rate	: N/A

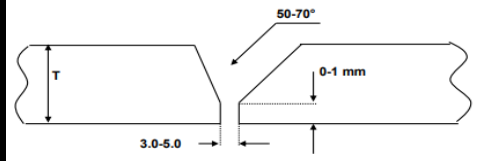
Joints

rep. Method	: Cut and grind
itial Clean	: As grind
ax. Run Type	: GTAW

Pass & Location

Max. Run Thickness	: 8.0 mm
Gouge Method	: None
Interpass Clean	: Grind &

Joints



GTAW - As re

Process	Pass No.	Consumable Type	Filler Size (mm)	Weld Position	Amps (A)	Volts (V)	Speed (cm/min)	Prog.	I Type Polarity
GTAW	As Required	ER70S-6	2.40	F/H/V/OH	100-200	10-18	2.5-12.6	N/A	DC -ve

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PLATE WELDING PROCEDURES SPECIFICATONS

PROCEDURE QUALIFICATION RECORD

Issued by: RBI TECH

P.O. No.:	Item:
Ref.:	Item No.:

General

Manufacturer	: **Ocks Engineering**	WPS Number:	OE/002G/W Rev.0
PQR No.	: OE/002G.B1 Rev.0	WPS Revision:	0
Welder (1)	: Yusuf Manuel	WPS Date:	19/07/2022
Identity Number	: 940831 5123 089		
Welder (2)	: None		
Identity Number	: N/A	Date:	01/09/2022
Code / Test Standard	: AWS D1.1 - 2020		

Base Metals

Material 1	: EN10025-2 S355JR+AR	Group No.:	Unassigned
Material 2	: EN10025-2 S355JR+AR	Group No.:	Unassigned
Thickness	: 12.0 to 12.0 mm	Diameter:	None-plate material
Backing	: FCAW - Yes	Backing Type:	Weld Metal
Inserts/Retainers	: None		

Welding Consumables

Process	: FCAW
Process Type	: Semi-automatic
Filler Specification	: A5.36
Filler Classification No.	: AWS E71T-1
Filler Composition	: C/Mn/Si
Filler metal diameter	: 1.20mm
Consumable Backing	: N/A
Trade Name	: Atlantic CHT711
Flux Trade Name	: N/A
Flux Type	: Rutile
Process Thickness	: 12.0 mm

Preheat & Interpass Temperature

Preheat Temperature	: 25°C minimum - Caused by tack weld
Heat Method	: None
Temperature Check	: Contact Thermometer
Interpass Temperature	: 98.6°C maximum
Heat Area	: None
P.H. Maintenance	: N/A
Other	: None

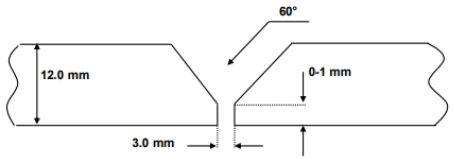
Shielding & Backing Gas

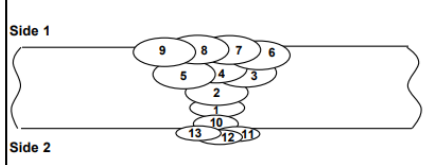
Type	: Carbon Dioxide
% Composition	: 100% CO2
Flow Rate	: 15 liter per minute
Orifice Size	: 15 mm I/D
Trailing Gas	: None
Backing Gas	: None
Flow Rate	: N/A

Joint Design Single Vee Groove weld

Pass & Location Sequence

Preperation Method	: Cut and Grind	Max. Run Thick	: 8.0 mm max.
Initial Clean	: As ground	Gouge Method	: Grind
Max. Run Type	: FCAW	Interpass Clean	: Grind





Run 1 to 9 FCAW - Side 1
Run 10 to 13 FCAW - Side 2

Process	Pass No.	Consumable Type	Filler Size (mm)	Weld Position	Amps (A)	Volts (V)	Speed (cm/min)	Prog.	I Type/ Polarity	Heat Input (Max)	Other
FCAW	1 to 9	E71T-1	1.20	2G (H)	160-203	24-25	11.3-48	N/A	DC +ve	2.13	Side 1
FCAW	10 to 13	E71T-1	1.20	2G (H)	144-197	25-26	36.4-42.9	N/A	DC +ve	0.75	Side 2

PROCEDURE QUALIFICATION RECORD

Issued by: RBI TECH

P.O. No.:	Item:
Ref.:	Item No.:

Welding Technique

Single/Multiple Arc	: Single Arc	Electrode Spacing	: None
Single/Multi Pass	: Multi pass	Transfer Mode	: Globular Transfer
Sides Welded	: Both side weld	Oscillation	: N/A
String/Weave Bead	: String 8 mm max.	Peening	: None
Filler Added	: N/A	CTWD	: 12-14 mm
SAW Recrushed Slag	: N/A	Tungsten Type	: N/A
Solid/Tubular Wire	: Tubular Wire	Tungsten Size	: N/A

Post Weld Heat Treatment

Heating Rate	: N/A	Cooling Rate	: N/A
Holding Temperature	: N/A	Method	: N/A
Holding Time	: N/A	Other	: No PWHT

Non-Destructive Examination (Ref)

Radiography (RT)	: WC22/07/17/13	Results :	Acceptable
Ultrasonics (UT)	: None		
Magnetic Particle (MT)	: None		
Dye Penetrant (PT)	: None		
Visual (VT)	: 100 % Acceptable		

Destructive Testing

Tensile Test: Table 6.2 (VML - 4766/22/B1)

Tensile Direction	Width (mm)	Thickness (mm)	Area (mm)	Gauge mm	Yield load kN	Max load kN	Yield Stress (Mpa)	UTS Mpa	ROA (%)	Elongation %	Fracture Location
T1	20.37	10.61	216.13	50.00	99.72	121.67	461	563	51	27%	Parent Metal -Ductile
T2	20.32	10.98	223.11	50.00	98.63	120.79	442	541	52	27%	Parent Metal -Ductile

Round Tensile Test: None

Mark	Diameter (mm)	Area (mm^2)	Ultimate Load (KN)	Tensile Strength (Mpa)	Yield Strength (Mpa)	0.2 % Proof Stress (Mpa)	Elong %	Gauge Length (mm)	Reduction in area %
-	-	-	-	-	-	-	-	-	-

Bend test: Table 6.2 (VML - 4766/22/B1) **Bend Angle:** 180° **Former Size:** 50 mm

Type	Result	Type	Results
Side bend 1	No visible defects	Side bend 3	No visible defects
Side bend 2	No visible defects	Side bend 4	No visible defects

Impact Tests: None N/A **Test Temp.** N/A

Mark (1) (2) (3)	Location	Impact Strength (J) (1)	(2)	(3)	Ave	Lateral Expansion (1) (2) (3)	Shear Fracture % (1) (2) (3)
-	-	-	-	-	-	-	-
-	-	-	-	-	-		

Analysis: None

Fillet Weld Fracture:	N/A	Macro Examination :	N/A
Appendices :	1 off	Penetration in Parent Metal:	N/A

Remarks

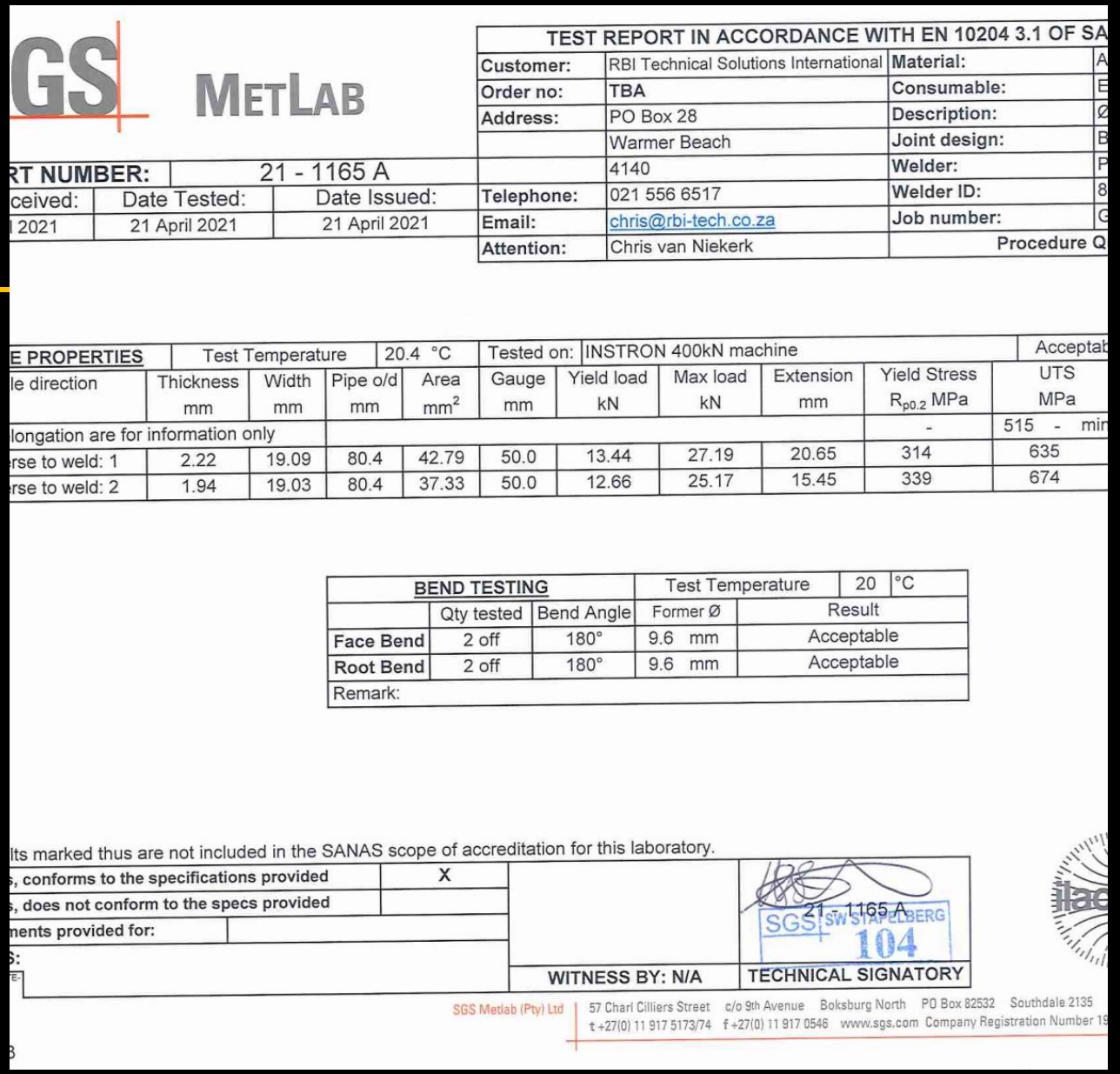
None

We certify that the test welds were prepared, welded and tested satisfactorily to the best of our knowledge in accordance with the requirements of the code / testing standard indicated above.

MANUFACTURER	CERTIFIED BY
Signature / Date	Signature / Date: 01/09/2022

LVUP068

- **TEST REPORT**



GS METLAB

TEST REPORT IN ACCORDANCE WITH EN 10204 3.1 OF SA			
Customer:	RBI Technical Solutions International	**Material:**	A
Order no:	TBA	**Consumable:**	E
Address:	PO Box 28	**Description:**	Ø
	Warmer Beach	**Joint design:**	B
	4140	**Welder:**	P
Telephone:	021 556 6517	**Welder ID:**	8
Email:	chris@rbi-tech.co.za	**Job number:**	G
Attention:	Chris van Niekerk	**Procedure Q**	

RT NUMBER:	21 - 1165 A	
ceived:	Date Tested:	Date Issued:
2021	21 April 2021	21 April 2021

E PROPERTIES	Test Temperature	20.4 °C	Tested on:	INSTRON 400kN machine					Acceptab
le direction	Thickness mm	Width mm	Pipe o/d mm	Area mm^2	Gauge mm	Yield load kN	Max load kN	Extension mm	Yield Stress $R_{p0.2}$ MPa	UTS MPa
longation are for information only									-	515 - min
rse to weld: 1	2.22	19.09	80.4	42.79	50.0	13.44	27.19	20.65	314	635
rse to weld: 2	1.94	19.03	80.4	37.33	50.0	12.66	25.17	15.45	339	674

BEND TESTING			Test Temperature	20 °C
	Qty tested	Bend Angle	Former Ø	Result
Face Bend	2 off	180°	9.6 mm	Acceptable
Root Bend	2 off	180°	9.6 mm	Acceptable
Remark:				

lts marked thus are not included in the SANAS scope of accreditation for this laboratory.

s, conforms to the specifications provided	X
s, does not conform to the specs provided	
ments provided for:	

S:

WITNESS BY: N/A

21 - 1165 A SGS SW STAPELBERG 104

TECHNICAL SIGNATORY

SGS Metlab (Pty) Ltd | 57 Charl Cilliers Street c/o 9th Avenue Boksburg North PO Box 82532 Southdale 2135
t +27(0) 11 917 5173/74 f +27(0) 11 917 0546 www.sgs.com Company Registration Number 19

QUALITY ASSURANCE & CONTROL REFERENCE

Let's Get to Work

- **OCKS ENGINEERING**
- Registration Number : 2020/699203/07
- Email: selaiman@ocksengineering.com
- https://ocksengineering.co.za
- Address: 3 Katdoring Street
  Kathu
  Northern Cape
- Contact: 064 754 3231