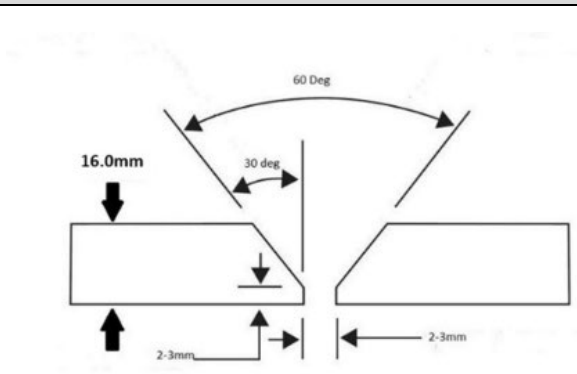
MECH TEM Solutions
EFFICIENCY THROUGH EXCELLANCE

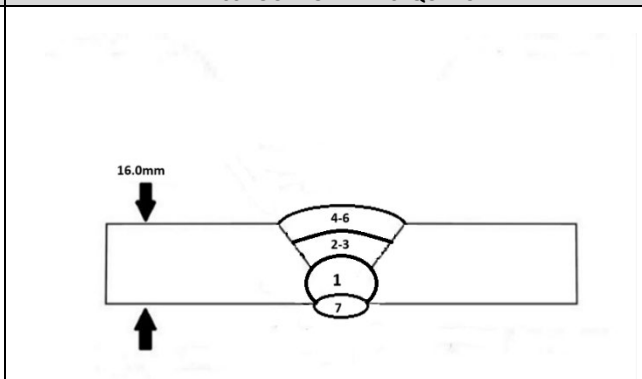
Procedure Qualification Record (PQR)			
MANUFACTURER	Mech-Tem (PTY) Ltd		Page 1 of 2
PQR No.	P001-25	**WPS No.**	W001-25
CODE AND YEAR EDITION	AWS D1.1/M1.1 2025		
WELDER NAME	SS Mofokeng		
ID/PASSPORT No.	850131 5408 087		
WELDER STAMP No.	Not applicable		
PQR TEST DATE	2025/06/06		
REVISION	00		
Base Metals			
MATERIAL GRADE 1	EN 10025-2-S355JR+AR	**GROUP No.**	Unassigned Mat.
MATERIAL GRADE 2	EN 10025-2-S355JR+AR	**GROUP No.**	Unassigned Mat.
MATERIAL THICKNESS 1	16.0 mm		
MATERIAL THICKNESS 2	16.0mm		
BACKING MATERIAL	Weld Metal (Back Grinding)		
PIPE OUTSIDE DIAMETER	Not applicable		
TYPE OF JOINT	CJP Single V Groove Joint		
FILLER METALS			
NUMBER OF PROCESSES	One		
PROCESS	Gas Metal Arc Welding (GMAW)		
PROCESS TYPE	Semi Auto		
FILLER SPEC. (SFA)	AWS SFA A5.18		
FILLER CLASS No. (AWS)	ER70S-6		
FILLER F No.	Not applicable as per Table 6.13 OF AWS D1 .1 /D1 .1M:2025		
FILLER A No./CHEM	Not applicable as per AWS D1 .1 /D1 .1M:2020		
DEPOSITED WELD THICKNESS	16.0mm		
TRADE NAME	EWN&S		
FILLER SIZE	1.2 mm		
FILLER BATCH NUMBER	0912		
SUPPLEMENTAL FILLER	N/A		
BACKING	Weld Metal		

PREHEAT AND INTERPASS TEMPRERATURE		SHIELDING GAS	
PREHEAT TEMP.	**24.2 ºC**	**GAS TYPE**	Argoshield 5
HEAT METHOD	**No Method Used**	**% COMP**	Ar- 93% / Co2- 5%/ O2- 2%
TEMPERATURE CHECK	**Digital Thermometer**	**FLOW RATE**	23 Liter per Minute
INTERPASS TEMPERATURE	**275° C Maximum**	**ORIFICE**	16 mm
HEAT AREA	**75mm each side of weld**	**TRAILING GAS**	**None**
PREHEAT MAINTANCE	**None**	**BACKING GAS**	**None**
OTHER	**None**	**FLOW RATE**	**None**

JOINT DESIGN



PASS LOCATION AND SEQUENCE



PREPERATION METHODE	Grind	**MAX RUN THICKNESS**	5. 0mm
INITIAL CLEAN	Degreased	**GOUGE METHOD**	Back Grinding to sound metal
BACK GOUGING	Yes	**INTERPASS CLEAN**	Grind/Brush

ELECTRICAL CHARACTERISTICS

PROCESS	WELD PASS NO.	CONSUMABLE TYPY	FILLER SIZE	WELD POSITION	AMPS (A)	VOLTS (V)	TRAVEL SPEED (mm/min)	PROGRESS	TYPE AND POLARITY	HEAT INPUT (kJ/MM)
GMAW	1-7	ER70S-6	1.2 mm	2G	225-280	22-27	290-350 mm/min	Not Applicable	DCEP	0.85-1.57

Procedure Qualification Record (PQR)					
MANUFACTURER	Mech-Tem (PTY) Ltd			Page 2 of 2	
PQR No.	P001-25		**WPS No.**	W001-25	
CODE AND YEAR EDITION	AWS D1.1/M1.1 2025				
WELDER NAME	SS Mofokeng				
ID/PASSPORT No.	850131 5408 087				
WELDER STAMP No.	Not applicable				
PQR TEST DATE	2025/06/06				
REVISION	00				

WELDING TECHNIQUE					
SINGLE/MULTI ELECTRODE	Single Electrode	**SOLID/TUBULAR WIRE**	Solid	**PEENING**	None
SINGLE/MULTI PASS	Multi Pass	**ELECTRODE SPACE**	N/A	**C.T.W.D.**	Not Recorded
SIDES WELDED	One side	**TRANSFER MODE**	Globular and Spray	**TUNGSTEN TYPE**	N/A
STRING/WEAVE BEAD	Stringer & Weave	**OSCILLATION**	N/A	**TUNGSTEN SIZE**	N/A
POWER SOURCE	Constant Voltage	**WIRE FEED SPEED**	Amperage Controlled		

POST-WELD HEAT TREATMENT			
HEATING RATE	None	**COOLING RATE**	None
HOLDING TEMPERATURE	None	**MATHOD**	None
HOLDING TIME	None	**PWHT CERT No.**	None

NON-DESTRUCTIVE EXAMINATION		
TYPE OF TESTING	**ACCEPTABLE/NOT APPLICABLE**	**REPORT NO.**
RADIOGRAPHY	Acceptable	AMH-RT-25094
ULTRASONIC	N/A	
MAGNETIC PARTICAL	N/A	
DYE PENETRANT	N/A	
VISUAL	Acceptable	

DESTRUCTIVE TESTING

TENSILE TEST

MARK	WIDTH (mm)	THICKNESS (mm)	AREA (MM)	ULTIMATE LOAD (KN)	TENSILE (MPa) STRENGHT	FRACTURE LOCATION AND APPEARANCE
1	**20.0**	**15.11**	**302.20**	**146.60**	**485**	**PM Ductile**
2	**20.0**	**14.67**	**393.40**	**143.80**	**490**	**PM Ductile**

BEND TEST: YES	**BEND ANGLE:** 180	**Mandrel Dia (mm):** 38
TYPE OF BEND TEST	**4 off Side bends**	
RESULT OF BEND TEST	**Acceptable**	
MACRO TEST	**N/A**	
FILLET FRACTURE	**N/A**	
MECHANICAL TEST REPORT No.	**Performed by VML Report MT 9998/25/A**	
NOTES:	MANUFACTURER:	COMPILED BY: AMH Quality Services
REMARKS:	SIGNATURE:	SIGNATURE: AMH Quality Services Aubrey Harmse (ANDT Level 2)
	DATE:	DATE: 2025/06/10

Customer Order No	FF159368
Order Number	Cert Number
MPV 4045487	**P64669 A**
Gross Mass	Invoice Mass
9320 Kg	9044 Kg
SAP Order No / Transport / Page	
1700777064 / ROAD / 1 of 1	
Dimensions (mm)	
12000 X 3000 X 016.000	

FAST FLAME PROFILING CC

PO Box 953
ROSETTENVILLE
2130

INSPECTION CERTIFICATE
AS PER REPORTING REQUIREMENTS EN10204: 2004; TYPE 3.1
ArcelorMittal South Africa Limited
Vanderbijlpark Works Reg No 1980/002/164/06

ISO17025 accredited for:
Hardness testing: MCSTHWP000003 based on ASTM E18, ASTM A370, ISO 6508-1
Impacts testing: MCSTHWP000006 based on ASTM A370, ASTM E517, ISO 148-1 and ASTM E646
Tensile Testing: MCSTHWP000009 based on ASTM E8, BS EN ISO 6892-1, BS EN ISO 10002-1, ASTM A370, JIS Z2241, ASTM E517 and ASTM E646

ArcelorMittal

STEEL PLATES		Specification	EN 10025-2-S355JR+AR 2019
Material Supplied	AS ROLLED		
Test Pieces Tested	10 - AS ROLLED		

SPECIFICATION REQUIREMENTS

CEQ Formula 1: C + MN/6 + (CR + MO+ V) / 5 + (NI + CU)/15 — CEQ Formula 2:

Impact: Subsize charpy specimen on thickness less than 12mm

Impact Temperature	Impact Positions		Impact Single Values		Impact Average Values		Impact Temperature	Impact Positions		Impact Single Values		Impact Average Values	

Tensile Test Piece Positions	YS (MPa) Min	YS (MPa) Max	TS (MPa) Min	TS (MPa) Max	N Value	EL %	RA Min
TX	355		470	630		20.0	

Hardness Unit	Hardness Min	Hardness Max	Bend Angle	Grain Type		
			Dia	Min	Max	

Chemical Analysis

	Elements	C %	MN %	P %	S %	SI %	N %	AL %	CU %	MO %	V %	NI %	CR %	NB %	TI %	B %	CEQ1	Hot Temp	Hot Value
Ladle	Minimum							0.0200									0.47		
	Maximum	0.2400	1.6000	0.0350	0.0350	0.5500			0.5500							0.0007			
Product	Elements																		
	Minimum																		
	Maximum																		

TEST RESULTS

Lift Card	Cast No	Serial Qty Tested	Impact Test Piece Dimensions (mm) Wth	Impact Test Piece Dimensions (mm) Thk	Impact Test Piece Pos	Impact Test Piece Cond	Impact Temp °C	Impact Results Deca-Joules 1	2	3	Avrg.	Impact Lat. Exp.			# Tensile Tests Test Piece Pos	Cond	YS (Mpa) (0,2%)	TS (Mpa)	Yield/ Tensile Ratio	EL 5,65*/A %	RA %	N Value	Hardness Test (* If applicable HR-W)	Hot Test	AN AL	C MO %	MN V %	P NI %	S CR %	SI NB %	N TI %	AL B %	CU %	CEQ1 CEQ2
VPD49252	F402561	4280 002													TX	10	429	585	0.73	29					L	0,1530 0,0010	1,3670 0,0580	0,0230 0,0080	0,0053 0,1220	0,1640 0,0020	0,0084 0,0010	0,0310 0,0002	0,0060	0.41

Purchaser's Authorized inspection Representative

SERIALS TESTED MAY DIFFER FROM CONSIGNMENT NOTE SERIALS AS ALL MATERIAL DOES NOT REQUIRE TESTING AS PER SPECIFICATION

AMH Quality Services
2025/06/06
Aubrey Harmse (ANDT Level 2)

Ultrasonic test	Not required	Marks on material Cast No / Serial No
Dimensional Inspection	Satisfactory	/ S355JR+AR
Surface Inspection	EN 10163-2- B/3 - Satisfactory	

Note: This certificate is generated by a computerized system.
It is hereby certified that the material described above complies with the requirements of the order

Cast Prefix Denotes	Test Piece Position	Annexures	Tolerance Dimensions
F = LADLE FURNACE CONCAST OSM	TX = TOP TRANSVERSE	CONSIGNMENT NOTE	Date 2024-05-01

MA Joubert (Metallurgical Technician)
Quality Control Representative

ISO 9001 2015

Results apply to sample as recieved

Customer Order No	FF159368
Order Number	Cert Number
MPV 4045487	**P64669 A**
Gross Mass	Invoice Mass
9320	9044

SAP Order No	Transport	Page
1700777064	ROAD	1 of 1

Dimensions
12000 X 3000 X 016.000

FAST FLAME PROFILING CC

PO Box 953
ROSETTENVILLE
2130

CONSIGNMENT NOTE

ArcelorMittal South Africa Limited
Reg No 1989/002164/06
Vanderbijlpark Works

ArcelorMittal

STEEL PLATES	Specification	EN 10025-2-S355JR+AR	2019
Material Supplied	AS ROLLED		
Test Pieces Tested	AS ROLLED		

Lift No	Cast No	Serial	Quantity	Dimensions	Lift No	Cast No	Serial	Quantity	Dimensions
VPD49252	F402561	4203	1	12000 x 3000 x 016.00	VPD49252	F402561	4280	1	12000 x 3000 x 016.00

AMH Quality Services
2025/06/06
Adrian Harmse (ANDT Level 2)

MA Joubert (Metallurgical Technician)
Quality Control Representative
2024-05-01

EWN&S Branches:
(Springs) 1 Jansen Road, Nuffield Springs 011 363 3330
(Nigel) 10 Lavers Road, Nigel 011 814 6251/5
(Sasolburg) 36 Geduld Street, sasolburg 016 976 0053
(Germiston) 45 Deodar Rd, Primrose 011 828 9907
Proud level 2 B-BBEE Contributor

CERTIFICATE NO. 20240928002 TEST CERTIFICATE

Commodity	Size	Batch No.	Mfg Date	Standard	Shielding Gas	Date of issue
MIG welding wire	1.2mm	0912	2024.09	AWS A5.18 ER70S-6	CO2+Ar	2024.09.28

Chemical Composition (%)

Element	C	Mn	Si	P	S	Cu	Ni	Cr	Mo	V	
Specification	0.06-0.15	1.40-1.85	0.80-1.15	≤0.025	≤0.035	≤0.50	≤0.15	≤0.15	≤0.15	≤0.03	-
Filler Metal	0.070	1.51	0.88	0.018	0.012	0.16	0.01	0.05	0.002	0.005	-

Mechanical Properties Of Weld Metal (As Welded)

	Tensile Strength MPa	Yield Point MPa	Elongation (%)	Impact Temp (°C)	Impact Value (J)
Requirement	500-640	≥420	≥20	-30	≥27
Real Parameter	548	445	27.5	-30	71.7
Remarks	This is a copy of the Original Certificate and the Original is kept at Head Office.				

AMH Quality Services
2025/06/10
Aubrey Harmse (ANDT Level 2)

Radiographic Inspection Test Report

Glospech

53 Houtkop Road
Duncanville
Vereeniging

Date: 10/06/2025
Report No: AMH-RT-25094
Pages 1 of 1

Client Details

Job Description:	Test Plate	Client Order Number:	PQR
Client:	AMH	Project:	Procedure Qualification Record
Client Representative:	Aubrey Harmse	Job Location:	Glospech X-ray Bay

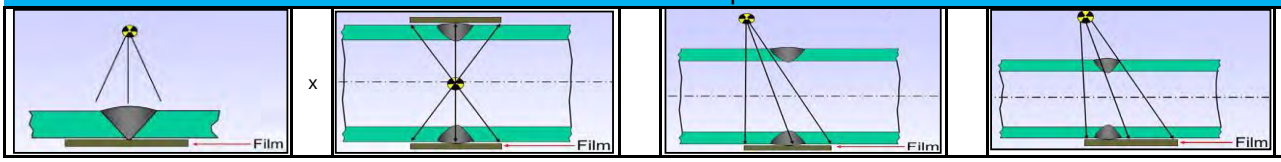
Test Component Details

Component Details:	Test Plate	Original Manufacturer:	SS Mofokeng 850131 5408 087
WPS/PQR	P001-25	Heat Treatment:	No Post weld heat treatment
Material:	EN 10025-2-S355JR+AR 2019	Weld Prep:	CJP Single V Groove Joint
Material:	EN 10025-2-S355JR+AR 2019	Extend of Test:	100% of weld
Manufacture Type:	GMAW 2G		

Test Specification

Code:	AWS D1.1/M1.1 2025	Procedure:	Glospech RT001 Rev 00
Acceptance Criteria:	AWS D1.1/M1.1 2025	Technique Sheet:	Glo-AWS-SWSI Rev 00

Test Technique



Test Equipment & Consumables

Radiation Source / Voltage:	Ir192	Radiation Source Size:	1mm x 2mm
Source Strength / Current:	10Ci	Source Strength / Current:	10Ci
Film Type:	100XD	Screen Type:	Lead
Screen Thickness:	0,025mm	Screen Placement:	Top and Bottom
Penetrameter Type:	6FEEN	Penetrameter Placement:	Source side
Processing Chemicals:	AFGA	Processing Temperature:	20

Test Results & Final Disposition

Weld/Item Identification	Welder Stamp	Weld Size	Weld Thickness	Film Position	Sensitivity Wire No:	SFD	Density	Exposure Time	Indication Type	Disposition
SS Mofokeng 850131 5408 087	N/A	300mm	16mm	0-30	10	400mm	2,6	8m10s	No recordable indication	ACC

Name	Technician	Interpreter	Client	Inspection Authority
	ACI APPEL	A EARLE		AMH Quality Services
Qualification	SNT-TC-1A Level 1	SNT-TC-1A Level 2		
Signature	Aci.Appel	A.Earle		Aubrey Harmse (ANDT Level 2)
Date	10/06/2025	10/06/2025		2025/06/10

Vaal Metallurgiese Laboratoriums (PTY) Ltd.
7 Bretts Lane, 21 Telford Street, Duncanville,
Vereeniging, 1939. Tel: 016 455 2000/1
081 251 7742 or 081 252 2494
E-mail: info@vml.co.za
Fax to E-mail: 086 653 1208

TEST REPORT IN ACCORDANCE WITH EN 10204		REPORT NUMBER:	9998/25/A
CUSTOMER:	AMH Quality Services (Pty) Ltd For Mech-Tem (Pty) Ltd	DATE TESTED:	19/06/2025
ADDRESS:	13 Madission Street, Risiville, Meyerton, 1929	MATERIAL SPEC: *	BS EN 10025 2 S355JR+AR
TELEPHONE:	071 408 5018		
E-MAIL:	aubrey@amhquality.co.za	SAMPLE ID: *	PQR 1: P001-25, WPS: P001-25 Welder: S.S. Mofokeng, ID: 850131 5408 087 Process: GMAW Position: 2G Consumable: ER70S-6 16mm
CONTACT:	Aubrey Harmse		
TEST: TENSILE AND BEND	SPECIFICATION: * AWS D1.1:2025	METHOD: VML-QLT-MTD-0001 & VML-QLT-MTD-0006	

Tensile Test

TEST: TENSILE | SPECIFICATION: * AWS D1.1:2025 | METHOD: VML-QLT-MTD-0001

Sample	Dimensions (mm)	Area (mm²)	Gauge (mm)	Yield Load (FeL) (kN)	Max Load (Fm) (kN)	Yield Stress (ReL) (MPa)	UTS (Rm) (MPa)	Elongation (A) (%)	ROA (Z) (%)	Fracture Location
Specification and customer requirements: BS EN 10025 2 S355JR+AR						355 Min	470 to 630			
Specification and customer requirements: Consumable: ER70S-6						470 Min	560 Min			
A: PQR 1: P001-25	20.00 x 15.11	302.20	50	112.00	146.60	371	485	35	61	PM Ductile
B: PQR 1: P001-25	20.00 x 14.67	393.40	50	119.00	143.80	406	490	34	56	PM Ductile

Bend Test

TEST: BEND TEST | SPECIFICATION: * AWS D1.1:2025 | METHOD: VML-QLT-MTD-0006

Bend Type	Mandrel Diameter (mm)	Bend angle (Deg.)	Requirements - Comments:
Side	38	180°	Acceptable
Side	38	180°	Acceptable
Side	38	180°	Acceptable
Side	38	180°	Acceptable

SANAS Testing Laboratory T0531

Tests requested, in accordance with spec. provided	x
Tests requested, NOT in accordance with spec. provided	
No requirements provided / For Info Only	

Remarks: Heat Treatment. As Welded.

AMH Quality Services
2025/06/19
Aubrey Harmse (ANDT Level 2)
WITNESSED BY

L.J. Cloete 19/06/2025
TECHNICAL SIGNATORY

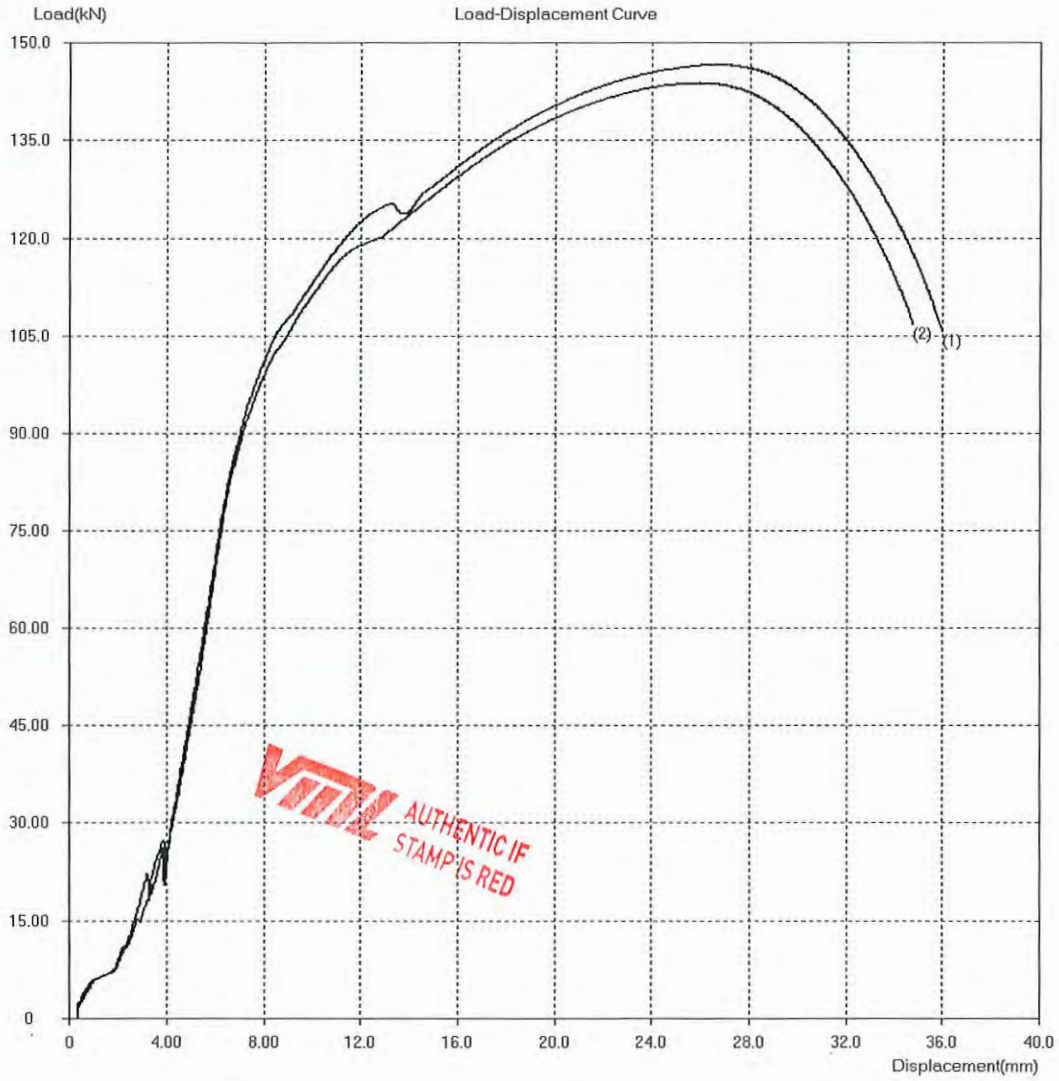
VML AUTHENTIC IF STAMP IS RED

VML is accredited for the following methods: VML-QLT-MTD-0001 to 0011, 0013, 0022, 0030, 0031 and (Supporting international standards).

VML TENSILE TEST REPORT

CUSTOMER: AMH
VML PROJECT NO: MT9998-25
TYPE: Flat
TEST DATE: 2025/06/19

	SampleNo	Size	Lo	FeL	Fm	ReL	Rm	So	A	Z	
		(mm)	(mm)	(KN)	(KN)	(Mpa)	(Mpa)	(mm^2)	%	%	
1	PQR P001-25	20.00*15.11	50	112.00	146.60	371	485	302.20	35	61	PMD
2	PQR P001-25	20.00*14.67	50	119.00	143.80	406	490	293.40	34	56	PMD



TESTER:

AMH Quality Services
2025/06/19
Aubrey Harmse (ANDT Level 2)

AUDITING:

AMH Quality Services

2025/06/06

Aubrey Harmse (ANDT Level 2)

GEREGISTREERDE WOON- EN POSADRES

1. Bewaar die boekie van u GEREGISTREERDE WOON- EN POSADRES in hierdie sakkie.

2. Indien u van adres verander het, of indien bestaande reëls of huidige adres, bv. straatnaam en/of -nommer, nie verander het nie, moet die vorm KENNISGEWING VAN ADRESVERANDERING, wat in die sakkie agter in die identiteitsboekmerk is, binne vyftien dae na verandering aan 'n meld en moet dit gedoen word by 'n distrik naby die nuwe straat- distrikkantoor van die DEPARTEMENT VAN BINNELANDSE SAKE

REGISTERED RESIDENTIAL AND POSTAL ADDRESS

1. Keep the book in your REGISTERED RESIDENTIAL AND POSTAL ADDRESS in this pocket.

2. If you have changed your address or if particulars of your present address, e.g. name of street and/or street number, are not correct, the NOTICE OF CHANGE OF ADDRESS form in the back of the identity document must be filled in within fifteen days after the change and it must be handed in at any office of the DEPARTMENT OF HOME AFFAIRS nearest to the new residential address.

1

I.D.No. 8501315408 08 7

S.A.BURGER/S.A.CITIZEN

VAN/SURNAME
MOFOKENG

VOORNAME/FORENAMES
SENEPHANE SARIEL

GEBOORTEDISTRIK OF LAND/
DISTRICT OR COUNTRY OF BIRTH
SOUTH AFRICA

GEBOORTEDATUM/
DATE OF BIRTH
1985-01-31

DATUM UITGEREIK
DATE ISSUED
2001-11-20