SPECIFICATION FOR SUPPLY, INSTALLATION, REPAIRS AND MAINTENANCE OF LIFTS

REFERENCE **REV**
CP_TSSPEC_425 **01**
DATE **18 September 2025**

COMPILED BY	FUNCTIONAL RESP	APPROVED BY	APPROVED BY
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FOREWORD

This document was prepared by the following member/s:

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The work group was appointed by facilities, which at the time of approval comprised of the following members.

Study Committee	Name	Department and Section
Emergency Documents	Mokgadi Kahumba Katlego Mogale Gavin Jardine David Makoni Hilda Nonkonyana Noel Maso Thabiso Letsaoana Mpho Molope	Metering Services (Domestic) Metering Services (Prepaid) Engineering Operations (Maintenance) Infrastructure Planning (NSP) Engineering Operations (Maintenance) Infrastructure Planning (Primary Plant Design) Engineering Operations (Maintenance) Logistics &Warehouse
	Mokgadi Magemba Itumeleng Gamede Paul Vermeulen Mike Radebe Silvester Raseboka	Technology Services (Primary Plant) Technology Services (Renewable Energy) Technology Services (Secondary Plant) Technology Services (Renewable Energy)

1. Introduction

The current lifts were installed in 2002 and are now 23 years old. This is at the end of its operational lifespan of 20-25 years as recommended in industry standards. As a result, the incidence of breakdowns has increased substantially, resulting in extended periods of lift unavailability, costly maintenance, disruptions to daily operations and productivity. The current lifts are no longer fully compliant to SANS 1545 safety standards as well as the Occupational Health and Safety Act (No. 85 of 1993), leaving the organisation open to potential legal risks, company reputation and litigation. Above financial repercussions, the frequent lift failures have heightened concerns with regards to the safety of employees and the ease of daily use, particularly for people with disabilities who depend on lifts for movement.

2. Scope of Work

The scope includes but is not limited to:

- Removal of existing lifts of **1000kg** (**13-passenger)**
- Supply and deliver of two **1000kg (13-passenger) lift**.
- Installation and commissioning of the lift in an office building (6 stops, 6 openings).
- Lift specifications:
    - Car interior: **hairline stainless steel finish**
    - Floor: **granite tile**
    - Doors: **fire-resistant, side-opening, stainless steel**
    - Drive system: **AC gearless closed loop digital VVVF**
    - Controller: **Monarch system**

- Power supply: **3-phase 415Vac (+/-6%), 50Hz**
- Reduced energy consumption by up to 70%
- Lighting: **single-phase AC220V, 50Hz**

- Provision of wiring, electrical connections, and control systems.
- Safety equipment installation (alarm, emergency light, intercom/phone).
- Testing, inspection, and certification of the lift system.
- **Training of designated client personnel.**
- Provision of 12 months guarantee on mechanical components, 5-year warranty and 6 months for electrical components post-installation.

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3. Normative References

The following documents contain provisions that, through reference in the text, constitute requirements of this standard. At the time of publication, the editions indicated were valid. All standards and specifications are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the documents listed below.

- SANS 1545-1: Electric Lifts - Safety rules for the construction and installation of Lifts Part 1
- SANS 1545-2: Hydraulic Lifts - Safety rules for the construction and installation of Lifts Part 2
- SANS 4344: Lifts – Steel wire ropes for lifts – minimum requirements

- SANS 8100-1: Lifts for the transport of persons and goods – Part 1: Safety rules for the construction and installation of passenger and goods passenger lifts
- SANS 14798: Lifts - (elevators), escalators and moving walks - Risk assessment and reduction methodology
- SANS 25745-1: Lifts - Energy performance of lifts, escalators and moving walks Part 1: Energy measurement and verification
- SANS 50081-1: Lifts - Safety rules for the construction and installation of lifts Part 1: Electric lifts
- SANS 50081-3: Lifts - Safety rules for the construction and installation of lifts Part 3: Electric and hydraulic service lifts
- SANS 50081-20: Lifts - Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods - Part 20: Passenger and goods passenger lifts
- SANS 50081-21: Lifts - Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods Part 21: New passenger and goods passenger lifts in existing building
- SANS 50081-41: Lifts - Safety rules for the construction and installation of lifts - Special lifts for the transport of persons and goods Part 41: Vertical lifting platforms intended for use by persons with impaired mobility
- SANS 50081-50: Safety rules for the construction and installation of lifts - Examinations and tests - Part 50: Design rules, calculations, examinations and tests of lift components
- SANS 50081-70: Lifts - Safety rules for the construction and installation of lifts - Particular applications for passenger and goods lifts Part 70: Accessibility to lifts for persons including persons with disability

- SANS 50081-72: Lifts - Safety rules for the construction and installation of lifts - Particular applications for passenger and goods passenger lifts Part 72: Firefighters lifts
- SANS 50081-80: Lifts - Safety rules for the construction and installation of lifts - Existing lifts Part 80: Rules for the improvement of safety of existing passenger and goods lifts
- SANS 53015: Lifts - Maintenance for lifts and escalators - Rules for Maintenance instructions
- SANS 9001: Quality management system
- SANS 14001: Environnemental management system
- SANS 18001: Occupational Health and Safety management systems.

The installation and operation of the lift must comply with the latest editions of:

- **EN 81-20 & EN 81-50**: Safety rules for the construction and installation of lifts.
- **SANS 1545**: Safety standard for electric lifts (South Africa).
- **ISO 9001**: Quality management systems.
- **ISO 14001**: Environmental management systems.
- **ISO 45001**: Occupational health and safety.
- **ISO 25745**: Energy Efficiency Standards
- Local building codes, fire regulations, and electrical installation standards.

4. Requirements

4.1 Technical requirements

Technical Specification Compliance Table

Requirement	Minimum Standard
Lift Capacity	1000kg / 13 passengers
Stops / Openings	6 stops, 6 openings
Rated Speed	1.0 – 1.6 m/s
Drive System	AC gearless, closed loop digital VVVF drive
Control System	Monarch microprocessor-based system
Power Supply	3-phase 415Vac (+/-6%), 50Hz
Lighting Supply	Single phase AC220V, 50Hz
Car Interior Finish	Hairline stainless steel panels
Floor Finish	Granite tile
Doors	Fire-resistant, stainless steel, automatic side opening
Safety Devices	Overload protection, emergency alarm, intercom/phone, emergency lighting
Accessibility	Compliance with disability access standards
Ride Quality	Smooth operation, low vibration and noise
Energy Efficiency	Regenerative drive (preferred)
Documentation	Test certificates, as-built drawings, O&M manuals, maintenance schedule
Quality Compliance	ISO 9001 certification
Environmental Compliance	ISO 14001 compliance, proper waste management
Health & Safety	ISO 45001 compliance, OHS Act adherence, PPE usage

4.2 Functional Requirements

- Smooth ride with minimal vibration/noise.
- Emergency operation in case of power failure.

- Overload protection and passenger safety systems.
- Compliance with disabled access standards.
- Reduced carbon emissions and contributes to a sustainable future

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5. Protection

The lift system must include protective measures for:

- **Passengers:** Emergency brakes, fire-resistant doors, alarm systems, emergency lighting.
- **Equipment:** Overload protection, surge protection, short-circuit prevention.
- **Building safety:** Fireproof wiring, compliance with fire escape requirements.

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6. Documentation

The contractor must supply:

- Design drawings and lift specifications.
- Test certificates and compliance approvals.
- Operation and maintenance manuals.
- As-built drawings.
- Maintenance schedule and service logs.
- Certificate of Compliance (COC)

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7. Quality Management

- Contractor must be **ISO 9001 certified**.
- All materials and workmanship must conform to relevant standards.
- Testing and commissioning must be documented and signed off by an accredited engineer.

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8. Environmental Management

- Contractor must comply with **ISO 14001** principles.
- Waste materials must be disposed of in an environmentally friendly manner.
- Preference for energy-efficient lift systems with regenerative technology.

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9. Health and Safety

- Contractor must adhere to **ISO 45001** standards and local OHS Act.
- Provide method statements and risk assessments before work commences.
- Workers must use appropriate **PPE (Personal Protective Equipment)**.
- Provide Safety signage and restrict access to installation areas.
- Adherence to Emergency evacuation procedures during installation.

Tender Number:

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Tenderer's Authorised Signatory:

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Name in block letters Signature

Full name of company:

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10. BOQ

Bill of Quantities (BOQ)

Project: Replacement of Old Lifts

Scope: Supply, Delivery, Installation, Testing & Commissioning

Anexture A Purchaser's specific requirements

Item	Description	Qty	Rate Per Item	Total Cost
1. Preliminary & General				
1.1	Site establishment, safety signage, hoarding & access arrangements	1		
1.2	Decommissioning & dismantling of existing lifts (including safe disposal)	2		
1.3	Protection of adjacent finishes, cleaning and making good	2		
1.4	PPE & Safety file	1		
2. Supply of New Lifts				
2.1	Passenger lift – 13 persons, 1000kg, 1.0 m/s speed, with machine room/gearless drive (specify as required)	2		
2.2	Complete set of lift doors, car cabin finishes (stainless steel/powder coated), lighting, control panels, intercom & alarm system	2		
2.3	Standard accessories & safety devices (buffer springs, overspeed governor, limit switches, ARD, fireman switch, etc.)	2		
3. Delivery & Handling				
3.1	Transport, off-loading, and safe storage on site	2		
4. Installation				
4.1	Installation of new lift mechanical components (guide rails, car frame, counterweight, safety gear, etc.)	2		
4.2	Installation of electrical components (controller, wiring, drive system, shaft lighting, machine room equipment, etc.)	2		
4.3	Finishing works (landing doors alignment, car operating panels, call stations, displays, etc.)	2		
4.4	Building alteration after installation	2		

5. Testing, Commissioning & Certificates				
5.1	Testing of lift safety systems, emergency functions, leveling accuracy, ride quality	2		
5.2	Commissioning and handover to client including certification from inspection authority	2		
5.3	COC certificates	2		
6. Training & Documentation				
6.1	Training of building maintenance staff on lift operation and safety	2		
6.2	Submission of O&M manuals, as-built drawings, warranty certificates	2		
7. Provisional Sums / Contingencies				
7.1	Provisional sum for unforeseen works / contingencies	2		

Summary

Section	Total Amount
1. Preliminary & General	
2. Supply of New Lifts	
3. Delivery & Handling	
4. Installation	
5. Testing & Commissioning	
6. Training & Documentation	
7. Provisional Sums	
TOTAL (Excl. VAT)	
VAT @ 15%	
GRAND TOTAL	

ANNEXURE A - BIBLIOGRAPHY

None

ANNEXURE B - REVISION INFORMATION

DATE	REV. NO.	NOTES
September 2025	0	First issue