SCOPE OF WORK FOR THE SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF AIR-CONDITIONING UNITS ACROSS VARIOUS TRANSNET ENGINEERING PLANT (CAPE-CORRIDO, CONTAINER CORRIDO, KOEDOESPOORT, NORTHEAST CORRIDO, IRON ORE CORRIDO AND DURBAN PLANT)

Document Number	TE_IMS_SPEC_002
Reference Number	PEMM_MAIN_DBN_SOW_090
Version	01
Effective Date	13.10.2026

DOCUMENT AUTHORITIES

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1. INTRODUCTION

This consolidated specification defines the minimum requirements for the supply, delivery, installation, testing and commissioning of air-conditioning units across the listed Transnet Engineering sites. It combines the common requirements and location-specific schedules contained in the six source specifications into one procurement and implementation document.

Tenderers shall identify apparent discrepancies or omissions through the tender clarification process. No tenderer shall alter quantities, reduce performance or introduce unpriced assumptions without an expressly identified deviation. Conditions that could not reasonably have been established before award shall be managed under the contract variation procedure. Every assumption, exclusion, qualification and deviation shall be entered in Annexure C.

1.1 Task description matrix

No.	Task description	Minimum requirement	Evidence required
1	Site verification and planning	Confirm each location, unit capacity, access, electrical supply, pipe/electrical routes, drainage point and shutdown constraints before procurement.	Signed site survey, measurements, marked-up schedule, risk assessment and programme.
2	Design and technical submittals	Complete heat-load/selection checks where required, confirm offered make/model, power demand, refrigerant, corrosion protection and installation details.	Technical data sheets, selection schedules, drawings, compliance matrix and deviation schedule.
3	Supply	Supply new complete units, controls, brackets, refrigerant pipework, insulation, cabling, isolators, drainage, trunking, fixings and accessories.	OEM data, invoices/delivery records, serial numbers, product certificates and warranties.
4	Delivery and storage	Deliver to the designated site, protect equipment against impact, weather and contamination, and store in accordance with OEM requirements.	Delivery notes, inspection records and storage/protection checklist.
5	Removal and making safe	Where applicable, isolate, recover refrigerant lawfully, remove existing units and dispose/recycle waste without damaging the building.	Isolation record, refrigerant recovery record, waste manifests and before/after photographs.
6	Installation	Install indoor and outdoor units, pipework, insulation, drains, supports, penetrations, trunking, wiring, isolators and corrosion protection as a complete system.	Inspection requests, installation checklists, concealed-work photographs and approved materials.
7	Electrical testing and certification	Provide dedicated protection, earthing, identification, testing and electrical certification for each installation.	Test results, DB schedule updates and valid electrical Certificate of Compliance.
8	Refrigeration testing and commissioning	Pressure/leak test, evacuate, charge where required, verify operating parameters, cooling/heating, controls, drainage, noise and vibration.	Pressure/vacuum records, leak-test results, commissioning sheets and measured readings.
9	Handover and close-out	Demonstrate operation, submit manuals, warranties, as-builts, certificates, spares information and leave areas clean.	O&M manuals, as-builts, warranties, completion certificate and snag close-out.

1.2. CONSOLIDATED SCOPE OVERVIEW

The following overview shall be read together with the expanded task description matrix, Sections 2 to 5, and Annexures A and B. In the event of a conflict, the more stringent safety, statutory, performance or site-specific requirement shall apply, subject to written direction by Transnet Engineering.

All offered equipment shall be suitable for the site environment and duty, supported in South Africa, and accompanied by technical data demonstrating capacity, energy performance, electrical characteristics, refrigerant type, sound levels, dimensions, mass and required clearances. Coastal and saline locations shall receive the specified anti-corrosion protection.

Quantities and nominal capacities in the overview are summary information and shall not replace the detailed site schedules. Before ordering equipment, the Contractor shall verify site conditions, room use, available electrical supply, installation clearances, pipe routes, condensate discharge, corrosion exposure and access constraints. Any discrepancy shall be reported through a formal clarification and shall not be used to reduce the specified performance or completeness.

The consolidated scope establishes a common technical and commercial basis for all listed regions while retaining the location-specific quantities and special requirements in Annexures A and B. The Contractor shall price and execute a complete, operational installation at every scheduled location, including all labour, supervision, equipment, access, logistics, minor builders work, electrical work, refrigeration work, testing, certification and handover needed for the intended service.

Region / Business	Site(s)	Unit Requirement	Quantity
Cape Corridor	Locomotive Maintenance Depot, Beaconsfield, Kimberley	18,000 BTU split units	3
Container Corridor	Masons Mills, Bay Head, ELD and Wentworth	12,000 BTU split units	7
Koedoespoort Main Plant	Koedoespoort	1 x 9,000; 1 x 12,000; 2 x 18,000 BTU split units	4
Northeast Corridor	Komatipoort	12,000 BTU inverter split units	2
Ore Corridor	Saldanha and Sishen	18,000 BTU split units	9
Durban Main Centre and surroundings	As detailed in Annexure B	9,000 / 12,000 / 48,000 BTU split and under-ceiling units	83

2. TECHNICAL REQUIREMENTS

As a minimum, compliance shall be evidenced by approved technical submittals; OEM data and installation instructions; proof of competent and registered personnel; product certificates; inspection and test plans; pressure, leak and vacuum test records; refrigerant recovery and charging records; electrical test results and Certificate of Compliance; commissioning sheets with measured operating values; waste transfer records; training records; warranties; and as-built documents. No equipment shall be energized, charged, concealed or handed over before the applicable hold-point evidence has been accepted.

Compliance evidence and acceptance basis

- SANS 10147, Refrigerating systems, including plants associated with air-conditioning systems: system safety, competent persons, installation, testing, operation and records.
- SANS 10142-1, The wiring of premises, Part 1: Low-voltage installations: circuit design, isolation, protection, earthing, inspection, testing and certification.
- SANS 60335-1 and SANS 60335-2-40: safety of electrical appliances and the particular safety requirements for heat pumps, air-conditioners and dehumidifiers.
- SANS 10400-O, National Building Regulations, Part O: lighting and ventilation, where the installation affects building ventilation or occupancy provisions.
- SANS 10400-XA and SANS 204, where applicable to building energy use or alterations requiring energy compliance.
- SANS 60529, degrees of protection provided by enclosures (IP Code), for outdoor isolators, enclosures and equipment exposed to dust or water.
- SANS 10234, globally harmonized system for classification and labelling of chemicals, for refrigerants, solvents, cleaning

chemicals and safety data sheets.
• SANS 10087-1 only where liquefied petroleum gas is used for hot work or associated site activities.
• Applicable SANS/ISO 9001, SANS/ISO 14001 and SANS/ISO 45001 principles for quality, environmental and occupational health and safety controls, where required by the contract.

Applicable SANS requirements

• Occupational Health and Safety Act, 1993 (Act 85 of 1993), as amended.
• Electrical Installation Regulations, 2009, including registered-person control and electrical Certificates of Compliance.
• Construction Regulations, 2014, where construction work, work at height, temporary works or demolition/removal activities apply.
• Pressure Equipment Regulations, 2009, together with applicable duties for refrigeration systems and refrigerant handling.
• Environmental Regulations for Workplaces, 1987, General Safety Regulations and relevant Driven Machinery Regulations for tools, access equipment, lifting tackle and work equipment.
• National Environmental Management Act, 1998, National Environmental Management: Waste Act, 2008, and National Environmental Management: Air Quality Act, 2004, including applicable refrigerant, emissions, recovery and waste controls.

Minimum legislation and regulations

The Contractor shall use the current applicable editions, amendments and incorporated normative references. Before procurement, the Contractor shall submit a standards and legal compliance register identifying each applicable requirement, the work activity controlled, responsible, competent person, required inspection or hold point, and the record that will demonstrate acceptance.

The Works shall comply with all legislation, regulations, South African National Standards, municipal requirements, Transnet Engineering site rules and manufacturer instructions applicable at the date of tender and execution. Compliance shall be demonstrated by objective evidence and not by a general statement of compliance. Where requirements differ, the statutory requirement shall take precedence, followed by the project specification and then the applicable standard or manufacturer instruction, unless a written concession is issued by Transnet Engineering.

2.1 Basis of compliance

2.2 MANDATORY COMPETENCY REQUIREMENTS

All refrigerant work shall be performed and supervised by appropriately registered, competent refrigeration practitioners. Electrical work and certification shall be performed by persons legally authorised for the applicable work. The tenderer shall submit valid registrations, qualifications and signed availability confirmations for the nominated personnel.

3. SPECIFIC REQUIREMENTS

3.1 General

All units shall be new, fit for purpose, complete with standard accessories, installed in accordance with manufacturer requirements and applicable South African standards.

3.2 Unit capacities

Nominal capacity requirements are 9,000 BTU/h (2.64 kW), 12,000 BTU/h (3.52 kW), 18,000 BTU/h (5.45 kW), and 48,000 BTU/h as listed in the schedules.

3.3 Electrical installation

Each unit shall be connected to a dedicated circuit breaker at the distribution board. The Contractor shall provide correctly sized power cables, a weatherproof isolator adjacent to the outdoor unit, correct earthing and protection, circuit identification, testing, and an electrical Certificate of Compliance on completion.

3.4 Mechanical installation

Indoor and outdoor units shall be properly secured. Outdoor units shall be level and vibration-free. Provide refrigerant piping, communication cabling, condensate drainage, trunking, brackets, fixings and all accessories required for a complete installation. Unless a written site-specific deviation is approved by Transnet Engineering, the scheduled allowance for each unit shall be 10 m of refrigerant piping, 20 m of electrical run and 20 m of trunking, as stated in Annexures A and B.

3.5 Refrigeration work

Refrigeration joints shall be tightened, vacuumed and leak-tested. Refrigerant shall be R410A or an alternative specifically accepted in writing by Transnet Engineering before award. Any alternative shall be supported by OEM confirmation of compatibility, safety classification, environmental characteristics, capacity and efficiency data, handling and competency requirements, local availability and service support, and a clause-by-clause equivalence and deviation statement. The alternative shall not be used unless technical equivalence and statutory compliance have been accepted in writing.

3.6 Corrosion protection

Units identified in the schedules shall receive anti-corrosion protection before installation. This is mandatory for coastal and heavy saline environments.

3.7 Inverter and insulation requirement

Komatipoort units shall be inverter type, installed with new pipes and communication cables. All pipes shall be insulated with UV-resistant Armaflex over the full length, and each unit shall be supplied with two remote controls.

3.8 Penetrations and drainage

Seal all wall penetrations and redundant holes with approved weatherproof material. Condensate drainage shall be securely routed, tested and arranged to prevent water ingress or nuisance discharge.

4. ENVIRONMENTAL, HEALTH AND SAFETY REQUIREMENTS

Emergency procedures shall address fire, electric shock, refrigerant exposure, pressure release, falls, spills and evacuation. Incidents, near misses, property damage and unsafe conditions shall be reported immediately. Transnet Engineering may stop unsafe work without relieving the Contractor of contractual obligations.

Work at height shall be planned and supervised under an approved fall-protection plan. Ladders, scaffolds, mobile platforms, lifting equipment and tackle shall be suitable, inspected and certified where required. Hot work, drilling, electrical work, refrigerant handling, pressure testing and lifting shall be controlled through permits and task-specific precautions. Electrical circuits shall be proved dead before work and re-energised only after inspection, testing and authorisation.

Before work starts, the Contractor shall submit an approved site-specific health and safety file, baseline and task risk assessments, method statements, appointments, competency records, medical fitness evidence where required, equipment registers, inspection records and emergency arrangements. Personnel shall complete Transnet induction, comply with permit-to-work, isolation and lockout requirements, use suitable PPE and maintain barricading and housekeeping.

4.1 Occupational health and safety requirements

Products shall be selected with due regard to legal refrigerant restrictions, energy performance, durability, repairability and local availability of parts. Safety data sheets shall be provided for refrigerants, cleaners, coatings and other controlled products. The Contractor shall reinstate penetrations and finishes and leave each area clean and free of debris.

Spill kits shall be available where oils, chemicals or refrigerants are handled. Any spill, leak, uncontrolled release or environmental incident shall be stopped, contained, reported and remediated in accordance with the approved environmental plan and site procedure. Work shall be planned to limit noise, dust, nuisance discharge and disturbance to operations.

Condensate shall discharge to an approved point without erosion, slipping hazards, water ingress, staining or impact on electrical equipment.

The Contractor shall prevent pollution and minimise waste throughout delivery, removal, installation and commissioning. Refrigerant shall not be knowingly vented to atmosphere. Existing refrigerant shall be recovered using suitable equipment and returned for lawful reuse, recycling, reclamation or disposal. Refrigerant type and recovered, added or removed quantities shall be recorded per unit. Oils, condensate, chemicals, packaging, scrap metal, redundant equipment and electronic components shall be segregated, contained and removed to authorised facilities. Waste transfer records shall be included in the close-out file.

4.2 Environmental requirements

The Contractor shall comply with all applicable environmental legislation, Transnet Engineering environmental requirements, site-specific environmental management procedures, and industry best practices throughout the execution of the Works. Environmental protection shall form an integral part of planning, installation, commissioning, maintenance, and disposal activities.

4.2.1 Environmental Legal Compliance

The Contractor shall comply with, but not be limited to:

- Occupational Health and Safety Act, Act 85 of 1993.
- National Environmental Management Act (NEMA), Act 107 of 1998.
- National Environmental Management: Waste Act, Act 59 of 2008.
- National Environmental Management: Air Quality Act, Act 39 of 2004.
- Applicable municipal by-laws and environmental requirements.
- SANS 10147 requirements relating to refrigerant handling and recovery.
- SANS/ISO 14001 environmental management principles.

4.2.2 Pollution Prevention

The Contractor shall take all reasonable measures to prevent environmental contamination arising from work activities, including:

- Prevention of refrigerant releases to atmosphere.
- Prevention of oil, fuel, chemical and solvent spills.
- Prevention of contamination of soil, stormwater systems and watercourses.
- Prevention of dust, smoke, unnecessary emissions, and nuisance conditions.
- Immediate clean-up of any environmental contamination caused by project activities.

4.2.3 Refrigerant Management

The Contractor shall:

- Recover refrigerants from existing systems before removal or disposal.
- Use approved refrigerant recovery equipment.
- Ensure refrigerants are reused, recycled, reclaimed, or disposed of through authorised facilities.
- Maintain records of refrigerant recovered, added, removed, or disposed of for each unit.
- Ensure no intentional venting of refrigerants occurs during installation, maintenance, or removal activities.
- Provide refrigerant recovery certificates and disposal documentation upon completion.

4.2.4 Waste Management

The Contractor shall implement waste minimisation and waste segregation practices.

The following waste streams shall be separately managed:

- Scrap metals.
- Refrigeration equipment.
- Electrical and electronic waste.
- Packaging materials.
- Plastics.
- Insulation materials.
- Waste oils.
- Chemical containers.
- General waste.

All waste shall be handled, stored in appropriate skips and bins, transported and disposed by a licensed waste service provider. Waste generated will be disposed at a registered and licenced landfill site, proof of safe disposal must be obtained and submitted to the SHE department.. Waste manifests and disposal certificates shall be submitted as part of project close-out documentation.

4.2.5 Chemical and Hazardous Substance Control

The Contractor shall:

- Maintain Safety Data Sheets (SDS) for all chemicals.
- Store chemicals in designated areas.
- Ensure chemicals are suitably labelled.
- Provide secondary containment for hazardous substances where required.
- Prevent uncontrolled discharge of chemicals to the environment.
- Ensure personnel handling chemicals are appropriately trained.

4.2.6 Spill Prevention and Response

The Contractor shall:

- Maintain spill kits at all work locations where oils, fuels, refrigerants or chemicals are handled.
- Train personnel in spill response procedures.
- Immediately contain, report, and remediate all spills.
- Dispose of contaminated materials through authorised channels.
- Record all environmental incidents and corrective actions.

4.2.7 Noise and Nuisance Control

The Contractor shall:

- Ensure equipment is maintained to reduce excessive noise and vibration.
- Restrict disruptive activities where operational requirements dictate.
- Prevent nuisance impacts on Transnet operations and surrounding stakeholders.
- The air conditioning equipment supplied and installed shall be selected and installed to minimize noise transmission to occupied areas. Indoor units shall not exceed **45 dB(A)** under normal operating conditions. Outdoor condenser units shall not exceed **70 dB(A)** measured at 1 metre from the unit. The overall noise level within occupied offices, workshops, control rooms, and administrative areas shall not exceed **55 dB(A)** during normal operation.
- During installation works, the Contractor shall implement measures to control excessive noise. Where noise levels exceed **85 dB(A)**, suitable hearing protection shall be provided and worn by all affected personnel

4.2.8 Water Management

The Contractor shall:

- Prevent water wastage during installation activities.
- Ensure condensate drains discharge to approved locations.
- Prevent ponding, erosion, slip hazards and water ingress.
- Prevent contamination of stormwater drainage systems.

4.2.9 Housekeeping and Site Rehabilitation

Upon completion of works, the Contractor shall:

- Remove all debris, waste materials and surplus equipment.
- Reinstate disturbed areas.
- Seal all wall penetrations and redundant openings.
- Restore building finishes affected by the installation.
- Leave the worksite in a clean, safe and operational condition.

4.2.10 Environmental Incident Reporting

All environmental incidents, including spills, refrigerant leaks, uncontrolled releases, pollution events, and non-compliances shall:

- Be reported immediately to the Transnet Representative.
- Be investigated by the Contractor.
- Have corrective and preventive actions implemented.
- Be documented and included in project close-out records.

4.2.11 Environmental Documentation Requirements

The Contractor shall submit the following prior to commencement of work:

- Environmental Management Plan (EMP).
- Environmental Risk Assessment.
- Waste Management Plan.
- Spill Response Procedure.
- Register of hazardous substances.
- SDS file for all chemicals and refrigerants.

Upon project completion, the Contractor shall submit:

- Waste disposal certificates.
- Refrigerant recovery records.
- Environmental incident register.
- Close-out environmental compliance report.
- Photographic evidence of site reinstatement and housekeeping.

Environmental Compliance Deliverables

The environmental close-out file shall contain:

1. Environmental Management Plan.
2. Waste manifests and disposal certificates.
3. Refrigerant recovery and charging records.

4. SDS register.
5. Environmental inspection reports.
6. Incident and spill records.
7. Site rehabilitation evidence.
8. Environmental compliance declaration signed by the Contractor.

5. TESTING, COMMISSIONING, DOCUMENTATION AND HANDOVER

- Verify cooling and heating operation where applicable, electrical functionality, drainage, refrigerant pressures, leaks, and abnormal noise or vibration.
- Demonstrate operation to the end user and mount the remote-control holder in a practical location.
- Provide three copies of operating and maintenance manuals, schematics, commissioning records, warranty documents and the electrical Certificate of Compliance.
- Leave each work area clean, safe and free of debris.

6. WARRANTY AND AFTER-SALES SUPPORT

- Provide a minimum 12-month warranty on workmanship and supplied equipment, or the manufacturer warranty where longer.
- Defective items shall be repaired or replaced at the Contractor's cost during the warranty period.
- The required site response time is not more than 24 hours. If the Contractor fails to remedy a defect within 24 hours after notification, Transnet Engineering may arrange the repair and recover associated costs.
- For the Durban scope, the Contractor shall demonstrate that spares can be procured locally within seven working days.

ANNEXURE A: REGIONAL UNIT SCHEDULE

Annexure A uses the same ten-column schedule structure as Annexure B and states the standard installation allowances applicable to each listed regional unit.

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
1	Cape Corridor	Locomotive Maintenance Depot, Beaconsfield, Kimberley	18000 BTU	Split unit, single rotary, cooling/heating	3	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
2	Container Corridor	Masons Mills, Bay Head, ELD and Wentworth	12000 BTU	Split unit with anti-corrosion protection	7	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
3	Koedoespoort Main Plant	Koedoespoort	9000 BTU	Split unit	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
4	Koedoespoort Main Plant	Koedoespoort	12000 BTU	Split unit	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
5	Koedoespoort Main Plant	Koedoespoort	18000 BTU	Split unit	2	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator;	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
								existing installation subject to site verification	
6	Northeast Corridor	Komatipoort	12000 BTU	Inverter split unit	2	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
7	Ore Corridor	Saldanha and Sishen	18000 BTU	Split unit with anti-corrosion protection	9	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

ANNEXURE B: DURBAN MAIN CENTRE AND SURROUNDINGS UNIT SCHEDULE

The following schedule is consolidated from the attached Durban specification. Source wording has been retained where practical and obvious line-wrap breaks have been normalised.

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
1	Umbilo ELD	ELD Boardroom	48000 BTU	Under ceiling unit with anti-corrosion protection	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
2	Umbilo ELD	LBM Office - Mr Zulu	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
3	Umbilo ELD	PCO Office - Planners	48000 BTU	Under ceiling aircon unit - including anti-corrosion protection on the external unit	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
4	Umbilo ELD	Senior Manager Office - Zweli Mthembu	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
5	Umbilo ELD	Customer Service Manager - Siyabonga Khanyile	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
6	Umbilo ELD	PCM Office - Scelo Shabalala	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
7	Umbilo ELD	Quality Manager Office - Slindo Office	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
8	Umbilo ELD	Engineering Technician Office - Patrick Office	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
9	Umbilo ELD	HR Office - Simon Manzini	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
10	Umbilo ELD	Logistics Manager Office	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
11	Bayhead Wagons	Operations Manager Office - Magubane	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
12	Bayhead Wagons	Quality Assurer Office - Zandile Ndlovu	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
13	Bayhead Wagons	PEMM Superintendent Office	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
14	Bayhead	Clerk Office - Zodwa Ngubane	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
15	Bayhead Wagons	Logistics Office - Nombulelo and Andile	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
16	Bayhead	LBM Office - Vishal Mohunlal	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
17	Bayhead	Business Secretary - Karishma	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
18	Bayhead	Warehouse Office - Mam Ngcongo	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
19	Bayhead Wagons	Planning Office - Mlungisi Masengemu	12000 BTU	Under ceiling aircon unit - including anti-corrosion protection on the external unit	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
20	Bayhead	Planning Office - Mandla Langa	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
21	Bayhead	Planning Office - Mzamo Ncwane	12000 BTU	Split unit with anti-corrosion	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
22	Bayhead Wagons	Maintenance Engineering - Nana Zondi	12000 BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
23	Bayhead Wagons	Warehouse Rubber Room	12000 BTU	Under-ceiling air-conditioning unit with anti-corrosion protection on external unit	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
24	RSE	Bay 61 (Shezi Fabrication office)	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
25	RSE	Bay 61 (Shaik's Fabrication office)	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
26	RSE	Bay 59 Quality Fabrication Office (Steven)	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
27	RSE	Bay 61 Ndabezitha Fabrication office no.5	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
28	RSE	Bay 61 Sthe office Fabrication	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
29	RSE	Bay 58 Sandile's Fabrication Office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
30	Wheelshop	A16 Board room	48000BTU	Under ceiling unit with anti-corrosion protection	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
31	Wheelshop	Bay 10 Office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
32	Wheelshop	Bay 10 Workshop	48000BTU	Under ceiling unit with anti-corrosion protection	4	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
33	Wheelshop	A16 Board room	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
34	Wheelshop	Bay 51 Quality Office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
35	Wheelshop	Bay 2 Supervisor office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
36	Ports 8216	Lindiwe Bay 45 Pott Hauler	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
37	Ports 1506	Konelo Bay 25	9000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
38	Ports 1506	Bhekani Mlangeni Bay 45	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
39	Ports 1506/8216	Nonhnanhla Bay 46	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
40	Ports 1506/8216	Eric Biyela Bay 25	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
41	Ports 1506/8216	Madgid Bay 45 Store	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
42	Maritme Business	Maritme Boardroom	48000BTU	Under ceiling unit with anti-corrosion protection	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
43	RSE Springs 2406	Essa Bay 58 office no.9	9000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
44	RSE Springs 2407	Mandla's Office Bay 66	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
45	RSE Springs 2408	Mokhele's Office Bay 58	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
46	RSE Springs 2409	Simphiwe office Bay 58	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
47	RSE Springs 2410	Mthembu bay 58	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
48	RM Modernization	Main motor supervisor's office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
49	RM Modernization	Armature shop supervisor's office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
50	RM Modernization	Store supervisor office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
51	RM Modernization	6E MA Test Bay	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
52	RM Modernization	S & D office	48000BTU	Under ceiling unit with anti-corrosion protection	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
53	RM Modernization	LBM office Siza	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
54	RM Modernization	RM Boardroom	48000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
55	PEMM	Ephraim Office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
56	PEMM	Vishay Office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
57	PEMM	Cecilia Office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
58	PEMM	Store office	48000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
59	PEMM	Gugu office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
60	Assets	Recreation Hall	48000BTU	Under ceiling unit with anti-corrosion protection	2	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
61	Assets	Wellness Centre	48000BTU	Under ceiling unit with anti-corrosion protection	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
62	Assets	Shunting Mess room	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
63	Assets	ITC office	48000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
64	Wagons	Bay33 sabelos office	9000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
65	Wagons	BAY 36 MADONDOS Office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
66	Wagons	BAY 36 Xolani's Office	9000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
67	Wagons	BAY 38 SNES OFFICE	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
68	Wagons	BAY 38 MADLALA	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
69	Wagons	BAY 36 AMANDA	9000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
70	Wagons	Nzama LBM Office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
71	Wagons	Wagons Boardroom	48000BTU	Under ceiling unit with anti-corrosion protection	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
72	CNR Locos	Bay 6 – Slie's office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
73	CNR Locos	Bay 7 – Zulu's office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
74	CNR Locos	Bay 19 – receiving office	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
75	CNR Locos	A39 – log office (upstairs)	48000BTU	Under ceiling unit with anti-corrosion protection	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
76	CNR Locos	A4 Admin office no.2	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
77	CNR Locos	A4 Admin office no.5	12000BTU	Split unit with anti-corrosion protection installed	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m

No.	Business	Location	Capacity	Type	Qty	Piping run	Electrical run	Electrical arrangement	Trunking
78	PD locos	Metrology	48000BTU	Under ceiling unit with anti-corrosion protection	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
79	PD locos	Metrology	12000BTU	Under ceiling unit with anti-corrosion protection	1	10 m	20 m	Dedicated C/B at DB + weatherproof local isolator; existing installation subject to site verification	20 m
80	PEMM	DBN Main center Canteen	105000	Ceiling - duct – type air conditioner with MPS Variable inverter technology	1	10 m	Use existing	Use existing	20 m

COMMISSIONING AND ACCEPTANCE CRITERIA

Each unit shall be accepted only after the following tests are recorded on the approved commissioning sheet. Instruments shall have valid calibration evidence. Failed tests shall be corrected and repeated before handover.

Test	Method	Instrument / calibration	Measured value	Acceptance limit	Witness / hold point	Authorised sign-off	Failure action
Visual and installation inspection	OEM instructions and project specification	Inspection checklist	Record defects	Correct unit, supports, clearances, insulation, labels and finishes; no visible defect	Transnet inspection before energisation	Contractor and Transnet Representative	Rectify and re-inspect
Electrical safety and functionality	SANS 10142-1 test procedure	Calibrated electrical test instruments	Record voltage, current, protective-device and earth test results	Results within OEM ratings and legal requirements; valid electrical CoC issued	Hold point before energisation	Registered electrical person and Transnet Representative	Isolate, rectify and repeat tests
Pressure and leak test	OEM method and SANS 10147	Calibrated pressure gauge and approved leak detector	Record pressure, duration and result	No pressure loss or detected leakage over OEM-specified test period	Witness before insulation/concealment	Registered refrigeration practitioner	Repair, evacuate and repeat test
Evacuation	OEM method	Calibrated vacuum gauge	Record final vacuum and standing test	OEM-prescribed vacuum achieved and maintained with no unacceptable rise	Hold point before charging	Registered refrigeration practitioner	Identify leak/moisture source and repeat
Cooling/heating performance	OEM commissioning method	Calibrated thermometer/clamp meter/manifold as applicable	Record entering/leaving air temperatures, current and pressures	Stable operation within OEM commissioning tolerances and rated electrical limits	Witnessed functional test	Contractor and Transnet Representative	Diagnose, rectify and recommission
Condensate drainage	Introduce test water at indoor drain pan	Visual inspection and test water	Pass/fail and discharge point	Unrestricted discharge at approved point; no leakage, backflow, ponding or water ingress	Witness before handover	Contractor and Transnet Representative	Rectify falls/joints and retest

Test	Method	Instrument / calibration	Measured value	Acceptance limit	Witness / hold point	Authorised sign-off	Failure action
Noise and vibration	Operate through available modes	OEM data and observation; meter if disputed	Record observation/readings	No abnormal noise or vibration; measured values not exceeding OEM published limits	Witnessed functional test	Contractor and Transnet Representative	Correct supports/balance/installation and retest
Controls and handover	Operate local and remote controls	Functional demonstration	Record all modes and controls	All specified functions and remote controls operate correctly; user demonstration completed	Final acceptance	End user and Transnet Representative	Rectify and repeat demonstration

ANNEXURE D: COMPLIANCE TO SPECIFICATION MATRIX

Tenderers shall complete every row. Responses shall be limited to Comply or Do Not Comply. Every response shall include an exact evidence reference. All deviations shall be disclosed in the designated column.

Requirement ID	Specification clause / schedule	Requirement	Bidder response Comply or Do Not Comply	Offered make / model
D1	Annexures A and B	Scheduled capacity, unit type and quantity		
D2	Clause 3.3 and schedules	Dedicated circuit breaker and weatherproof local isolator		
D3	Clause 3.5	Refrigerant compliance and approved equivalence evidence		
D4	Clause 3.6 and schedules	Specified anti-corrosion protection		
D5	Clause 3.7	Komatipoort inverter units, new pipe/communication cable, full UV-resistant insulation and two remotes		
D6	Clauses 3.4 and schedules	Included piping, electrical, trunking, supports, penetrations and drainage allowances		
D7	Section 5 and acceptance schedule	Testing, commissioning, calibrated		

Requirement ID	Specification clause / schedule	Requirement	Bidder response Comply or Do Not Comply	Offered make / model
		instruments and objective acceptance records		
D8	Section 6	Minimum 12-month warranty and manufacturer warranty where longer		
D9	Section 6	Maximum 24-hour site-response commitment and escalation contact		
D10	Section 6	Durban spares availability within seven working days		
D11	Clauses 4.1 and 4.2	Safety, environmental, refrigerant recovery, waste and close-out controls		
D12	Annexure C	All assumptions, exclusions, qualifications and deviations disclosed		