

Section 7
General and Functional Specifications

General Specifications

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1.1 Standard Specifications and Codes of Practice

The whole of the work shall be carried out to the requirements inter-alia of this specification together with the relevant Local Council/Authority Codes of Practice where these apply, including all amendments issued up to the time of manufacture.

1.2 Workmanship

All workmanship shall be to a high standard of quality in accordance with norms of the industry and appropriate to the particular function of the works. To this end, the Contractor shall employ only qualified tradesmen to undertake the various skilled works under the supervision of a competent foreman.

1.3 Material

All new materials and goods used in permanent works shall be new, of good quality and to appropriate standards and specifications of industry and/or as indicated out in this document. The supplier shall include in their tender not only the major items of equipment and fittings, but all the incidental sundry components necessary for the complete execution of the works and for the proper operation of the installation.

1.4 Transit and Procurement

All goods shall be carefully packed to prevent damage in transit and procurement including its storage on site and such manner as will prevent deterioration. Any damage or deterioration shall be made good by the Bidder at his expense.

1.5 Safety

All works carried out are governed by the Occupational Health and Safety Act 85 of 1993. The Bidder will be subjected to a Project Safety, Health and Environmental Plan (Annexure G; Annexure H) based on the Health and Safety Specification requirements issued by the clients.

1.6 Site Inspection

It is the responsibility of the bidder prior to commencement of installation, to view the site in terms of access, building dimensions, civil / electrical interfaces, offloading and assembly areas. UNDP will not be responsible for, or pay any expenses or losses, which the bidder may incur in the delivery of goods, equipment, and components to the client's site. All access routes and areas allocated for assembly must be approved by the project manager before the commencement of the delivery to the client's site.

1.7 Local Authority by-laws

All work shall comply with Local Authority By-Laws and regulations.

1.8 F.E.M. Code of Practice

All equipment & installations shall conform to the Federation Europeende De La Manutention (F.E.M.) Code of Practice.

1.9 Proprietary Products

Proprietary products shall be installed strictly to manufacturer's instructions and specifications and where necessary, under specialist supervision.

1.10 Maintenance Contract

An all-in maintenance contract proposal for a period of 2 years after the warranty period is to be included for consideration by the client. Contract approval and negotiations will be concluded between the client and successful offeror prior to project handover. The number of trained personnel and response time in Lusaka to be indicated.

The vendor must indicate their long-term structure and long-term ability to supply technical resources such as mechanical and electrical repairs, maintenance and upgrades. That includes the local representation in Zambia for this type of maintenance and for the purchase of spare parts.

1.11 Recommended Spares List

The vendor is to submit with tender documents, a detailed list of recommended spares, costs (if applicable) and confirm the location where the spares will be held.

1.12 Operation Manuals

Four (4) sets of operation manuals are to be supplied by the successful Bidder prior to driver training.

1.13 Operator Training

Bidders are to submit with tender documents a proposed training programme for Operators which upon approval, be concluded between client and successful Bidder prior to project handover.

1.14 Electrical Installation of Battery Charging & Wire Guidance Line Driver

The entire installation shall comply with Local / Council Authority requirements. A full description of location and function of controls must be specified in the tender. Power requirements including battery charger connections must be clearly detailed.

1.15 Variation Orders

Should any extra work or variations be required to the system or design, and is agreed by both the project manager and UNDP, then the Contractor shall submit a written fixed price for any such agreed variation within 5 working days.

Should this not occur, the project manager will make a fair assessment of the value of the variations required and this will form the variation order price and no correspondence shall be entered into by the contractor whatsoever.

Extra work and variations may only be executed after a written order from the project manager and UNDP. Small jobs necessary for the finishing of the total supply, even when not mentioned in this tender, are not considered for claiming extra work.

1.16 Commissioning and Training

After contract award the successful Bidder must submit a detailed proposal of commissioning, acceptance and maintenance procedures to be employed for evaluation and agreement.

Following acceptance of the maintenance contract the Bidder must be offer top-down training on three levels. The Bidder must provide training staff, classroom aids and manuals according to the grade of training. The client is to specify the number of students and the type of training that is to be undertaken. The levels are as follows:

- ✓ Management training
- ✓ Operator training
- ✓ Maintenance training

1.17 Guarantee

All new equipment offered must be guaranteed for a minimum period of 12 months after commissioning. Scope and limitations of guarantee are to be fully detailed in the tender.

1.18 Insurance

The contractor and his sub-contractors shall provide as a minimum the following: -

- ✓ Insurance in terms of the provisions of the Workmen Compensation Act No. 30 of 1941 as amended.
- ✓ Employer's common law liability insurance in the joint names of UNDP and the contractor.
- ✓ Public Liability Insurance's
- ✓ Insurance of own tools and equipment
- ✓ Performance guarantees.

These insurances shall be maintained in force for the duration of the contract and until expiry of the period of maintenance and in respect of sub-contractors, the contractor shall be deemed to have complied with the provisions of the requirements relating to insurance by ensuring that the sub-contractors have effected such insurance.

The insurance to be provided by the contractor and his sub-contractor shall be effected with insurers and on terms approved by UNDP (which approval shall not be unreasonably withheld). The contractor shall within 14 days of the contract commencement, produce to UNDP, the policies of insurance and receipts for payment of the current premiums. This procedure must be repeated at each policy renewal date.

If the contractor fails to effect and keep in force the insurance's referred to them, then UNDP may effect and keep in force any such insurance and pay such premium or premiums as may be necessary, and from time to time deduct the amount paid by UNDP from any monies due or which may become due to the contractor or recover same as a debt from the contractor.

1.19 Latent Defects Liability

"Latent defects liability period" shall mean the defects that have being ascertained by the client as faults directly attributed to materials or workmanship which in not in accordance with the contract. The supplier's liability in terms of this will exclude fair wear and tear of the works.

1.20 Project Meetings

The contractor must make himself available to attend key project meetings as convened by the project managers.

Functional Specifications

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2.1 Overview

This section calls for the supply, delivery, installation, commissioning and driver training of:

Electric, Man-Up, Very Narrow Aisle Fork-Trucks;

The VNAs will be fitted with RF data communication equipment all of which will be supplied free issue by others.

The Bidder must allow for the installation of the RF equipment mounting brackets. The brackets will be supplied to the appointed supplier for functional electrical and mechanical fitment prior to the fork-truck's delivery on site.

Reference Drawings: -

MSL 001 Rev E	- Site Plan
MSL 002 Rev.F	- Warehouse Detail
MSL 003 Rev.F	- Sections and Elevations
MSL 2017 001 Rev.J	- AutoCAD Drawing

These drawings have not been included in the document but are available from UNDP upon request.

2.2 Application Parameters

2.2.1 Load Units

Unit	Pallet + Load
Type	4-Way Entry, Perimeter Based Euro Pallet
Entry / Width	800mm
Depth	1,200mm
Height	1350mm (pallet plus load)
Mass	800kg

2.2.2 Performance Specifications and Duty

All equipment must be continuously rated and capable of operating 8 hours per day on an ongoing basis. For maintenance and spare parts consideration, an 8-hour, five-day week should be considered.

2.3 MHE Requirements

2.3.1 General Tender Requirements

Full details must be submitted for the following: -

- ✓ Detailed tender price breakdown.
- ✓ Rental with Full Maintenance cost with the maintenance contract specified separately.
- ✓ Capital cost per truck including battery and charger with an all-in-maintenance contract specified separately.
- ✓ Service agreement/costs for routine service and call outs.
- ✓ Maintenance schedule.
- ✓ Driver training.
- ✓ Warranties.
- ✓ Delivery and installation schedule.

2.3.2 Electric, Man-Up, VNA Fork-Trucks (3-Off Required)

The ergonomic design of the VNA trucks is to be capable of regular pallet storage and retrieval to ensure sufficient safety and ease of operation. All Bidders are requested to submit a detailed specification for the following:

- ✓ Lift height to top of beam 12,800mm.
- ✓ Operating aisle (pallet face-to-pallet face) 1,850mm based on the load parameters in item 4.2.1.
- ✓ Specify machine chassis width.
- ✓ Wire guidance to be fitted to machines.
- ✓ Specify lowered height of machine.
- ✓ Minimum Load Capacity: 800kg lift capacity at all levels.
- ✓ 1,200mm Fork length.
- ✓ Load Centre: 600mm.
- ✓ Machines to be fitted with strobe light.
- ✓ Floor tolerance required, generally following the recommendations and requirements to DM1 of the Concrete Society Technical Report No. 34.
- ✓ Static and dynamic wheel loads of the machines with/without loads. Wheel type and dimensions must be indicated.

- ✓ Battery charger specifications, power requirements and connections (8 hour automatic chargers required).
- ✓ **One battery per truck plus one spare battery**, battery specifications with maximum capacity rating, including a detail indication of sizes and methods of exchange.
- ✓ Width of transfer aisle.
- ✓ Height selector/indicator.
- ✓ Details of fixture and power supply capability for RF data communication equipment.

2.3.3 **Wire-Guidance Installation**

The VNA area will operate by means of an Inductive Wire Guidance system. Bidders are required to quote for the supply, installation and commissioning of the wire-guidance floor installation inclusive of the line driver (Transmission box). Refer to drawing MSL 002 Rev. E for rack layout. The wire guidance slot may **not be deeper than 15 mm** so to ensure that the wire remains 50 mm away from any reinforcement bars in the floor. Bidders are to provide a method statement indicating their saw cut methodology, laying of the wire, expansion loop method and the filling of slot with a recognized epoxy filler which will be subject to approval by the Engineer.

The N^o of line driver/s is to be confirmed by the bidder and the final positions will be determined on site. Bidders are to confirm the full power requirements for the line driver/s inclusive of voltage and fuse amperage.

The successful bidder shall provide a dimensioned drawing indicating the guide-path arrangement and end-of-aisle controls in relation to the racking positions and datum point set-out.