

ROAD MAKING EQUIPMENT

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1. GENERAL SPECIFICATIONS INTRODUCTION

- 1.1. This General Specification shall be read in conjunction with and shall form part of the specific item Specification.
- 1.2. The equipment to be supplied shall comply with all specifications contained herein unless otherwise stated in the specific Specification.
- 1.3. Where this General Specification has limited application, those clauses which have relevance are listed in the specific Specification.
- 1.4. Where the requirements of this General Specification conflicts with those of the specific Specification the requirements of the specific Specification shall take precedence.
- 1.5. Where items in this General Specification are listed for noting, bidders are to initial the "Noted" connotation to acknowledge their acceptance of the clause.
- 1.6. The column under "Comply / Not Comply" shall be completed by the bidders, by deleting whichever is not applicable. In cases where it is considered that the requirements of this General Specification do not apply, N/A shall be inserted under "Comply / Not Comply".

COMPLY / NOT COMPLY
(*Delete/Cross-Out whichever is not applicable)
Noted
(Bidder to initial each noted item)

2. ROAD TRAFFIC REGULATIONS

All on road equipment shall in all respects comply with the National Road Traffic Act, Act No. 93 of 1996, and Regulations.

*Comply / Not Comply

3. OPERATIONAL DUTY

The equipment must be capable of satisfactory operation under the arduous conditions encountered, at all altitudes up to 2 500 m above mean sea level and in ambient temperatures varying between -5°C and 40°C.

*Comply / Not Comply

4. ENGINE

(a) The engine shall be of the diesel type.

*Comply / Not Comply

(b) As only standard grade diesel (500ppm sulphur) is available, only machines that can run permanently using standard grade diesel without adverse consequences should be offered.

*Comply / Not Comply

(c) The net power output referred to in the specification shall be measured in terms of ISO 9249:2007.

*Comply / Not Comply

Bids which quote gross power which excludes deductions for parasitic losses may be disqualified.

*Comply / Not Comply

(d) The engine must be certified to according to EU Directive 2004/26/EEC, stage 2 as a minimum regarding engine emissions. No after treatment of exhaust gasses is permitted. I.e. no catalytic converter or particle filter is to be fitted. Supportive documents to be provided.

*Comply / Not Comply

(e) The engine shall be fitted with an approved diesel fuel water draining trap. The water trap shall be adequately protected by an easily removable cage or by the structure of the machine.

*Comply / Not Comply

- | | |
|---|----------------------|
| The water trap shall be approved by the engine manufacturer. | *Comply / Not Comply |
| (f) The engine is to be fitted with efficient fuel and lubricant filters. An approved fuel filter capable of removing solids down to ten micron shall be fitted | *Comply / Not Comply |
| (g) Efficient exhaust mufflers and rain traps shall be provided. | *Comply / Not Comply |
| (h) The machine is to meet the following sound levels: External: 110 dB (A) as per ISO 6395:2008. | *Comply / Not Comply |
| (i) The engine shall be electric power started and shut down via key or switch in the cab. | *Comply / Not Comply |
| (j) The engine must be fitted with an hour meter. | *Comply / Not Comply |
| (k) Fitment of a 3-way mechanical automatic shut-off system (Sentinel/ Lubri-Vent or equivalent) monitoring system may be required. Engine oil pressure, water coolant temperature and coolant pressure must be monitored and it is to be fitted with a test facility. This is to be quoted for separately. | *Comply / Not Comply |
| (l) Fitment of a UDF (Ultrafine Depth Filtration) or similar diesel fuel filter capable of removing all impurities down to 0.5 micrometres in size may be required. The filter is to be of sufficient size to suit the power rating of the engine. This is to be quoted for separately. | *Comply / Not Comply |

5. OIL SAMPLING VALVES

Oil sampling pressure valves may be required on all pressurised wet compartments. The oil pressure valves must be able to measure the compartments oil pressure and be able to take an oil sample. (Make: BETA-MICRO TEST, Model: BMT-20 (G 1/4") or equivalent.)

NB: A Wearcheck oil sampling gun must be able to fit the valves. This is to be quoted for separately.

*Comply / Not Comply

6. AIR FILTER

- (a) Unless otherwise specified, a two stage dry element type air filter unit with cyclonic pre-cleaner first stage and serviceable element second stage shall be provided.
In addition, a replaceable safety element shall be provided.

*Comply / Not Comply

*Comply / Not Comply

- (b) Automatic dust ejection is preferred. Bidders shall describe the method of dust ejection employed.

*Comply / Not Comply

- (c) Initial restriction of not more than 150 mm water gauge is required. Restriction indicators shall be fitted to all air filter installations. Restriction indicators shall be of the progressive type, which show increasing restriction as the elements become clogged. (Donaldson Informer or equivalent).

*Comply / Not Comply

- (d) The air ducting from the filter unit to the engine shall be of the moulded type with double stainless, worm drive clamps at each end or of steel construction with flanged connections. Single stainless steel T-bar clamps will be accepted as an alternative.

*Comply / Not Comply

- (e) The air intake shall be positioned outside the engine canopy such that rain and exhaust gas cannot enter. The air filter unit shall be positioned so that it cannot be damaged during operation of the equipment.

*Comply / Not Comply

- (f) Machines fitted with air filter installations which do not comply with this specification will be summarily rejected without payment.

*Comply / Not Comply

7. CABS

- | | |
|---|----------------------|
| (a) Unless otherwise specified, full cabs are required which shall be weatherproof and dustproof and lockable. | *Comply / Not Comply |
| (b) The cab shall be flexibly mounted to the chassis. | *Comply / Not Comply |
| (c) The hinges of the cab doors shall be robust and securely fitted. The cab doors shall be fitted with draught excluding seals. | *Comply / Not Comply |
| (d) The screens and windows shall be of safety glass and so marked. | *Comply / Not Comply |
| (e) A minimum of one large rear view mirror is required on each side of the cab. | *Comply / Not Comply |
| (f) The driver's seat shall feature sprung suspension, shall be adjustable for height and leg room and be well padded. It must be fitted with a seatbelt. | *Comply / Not Comply |
| (g) All instruments shall be in good view of the driver. | *Comply / Not Comply |
| (h) Cabs shall be fitted with fans and heaters or air conditioner. The fitment of air conditioning must be quoted for separately if not standard. | *Comply / Not Comply |
| (i) A 2.5kg, a 4.5kg or a 9 kg dry powder type fire extinguisher shall be fitted in the cab or as specified in accordance with the required legislation. In the event that it is not specified, the end user will be able to specify the size required and the area of fitment. | *Comply / Not Comply |
| (l) Sun visors and windscreen wipers at the front shall be provided. | *Comply / Not Comply |
| (m) Cabs which are not well finished will be rejected. | *Comply / Not Comply |
| (n) The cab must have sound protection to limit internal noise to 80 dB (A) at the operator station per ISO 6396:2008. | *Comply / Not Comply |
| (o) Where specified, cabs must be ROPS or ROPS and FOPS in terms of SANS 3471:2009 and SANS 3449:2008 | *Comply / Not Comply |
| (p) Cabs must be fitted with a rubber floor mat. | *Comply / Not Comply |
| (q) Earth moving equipment cabs must comply with ISO 5006:2006 regarding the operator's field of vision. | *Comply / Not Comply |
| (r) Access to the cab must comply with ISO 2867:2011. | *Comply / Not Comply |

8. INSTRUMENTS AND GAUGES

The following instruments and equipment shall be provided on the instrumental panel where applicable:

- | | |
|---|----------------------|
| (a) Air or electrical horn switch or button | *Comply / Not Comply |
| (b) Ammeter or voltmeter | *Comply / Not Comply |
| (c) Air tank pressure gauge(s) | *Comply / Not Comply |
| (d) Engine oil pressure gauge | *Comply / Not Comply |
| (e) Engine cooling water temperature gauge | *Comply / Not Comply |

- | | |
|--|----------------------|
| (f) Fuel tank gauge | *Comply / Not Comply |
| (g) Mechanical or electrical engine hour meter | *Comply / Not Comply |
| (h) Torque converter temperature gauge (if converter fitted) | *Comply / Not Comply |

In addition a monitoring system shall advise the operator of:

- | | |
|---------------------------------------|----------------------|
| (a) High engine temperature | *Comply / Not Comply |
| (b) Low oil pressure | *Comply / Not Comply |
| (c) High transmission oil temperature | *Comply / Not Comply |
| (d) Blocked air filter | *Comply / Not Comply |
| (e) Blocked hydraulic filter | *Comply / Not Comply |
| (f) High hydraulic oil temperature | *Comply / Not Comply |
| (g) Low fuel level | *Comply / Not Comply |

9. BRAKES

- | | |
|---|----------------------|
| (a) The braking system must comply with SANS 3450. | *Comply / Not Comply |
| (b) Where applicable, power assisted, dual circuit brakes operating on all wheels and a separately actuated parking brake are required. | *Comply / Not Comply |

10. LIGHTS

Electric lights for travelling and night operation and flasher type indicators are to be fitted. The lighting must comply with SANS 12509 and the National Road Traffic Act (Act 29/1989).

*Comply / Not Comply

As an option, bidders must quote separately for the fitment of an orange rotating light mounted on the cab or flashing orange LED strip lights fitted to all 4 sides of the cab, mounted just below the roof and protected from damage.

*Comply / Not Comply

11. RADIATOR

The radiator shall be suitable for tropical conditions and for continuous operation at maximum power at 40°C ambient temperature.

*Comply / Not Comply

12. TYRES

The tyres on any axle shall be able to carry the gross vehicle mass axle loading at maximum speed and within the TREDCO rating.

*Comply / Not Comply

All tyres supplied on equipment must be freely available commercially in South Africa.

*Comply / Not Comply

13. TOW HITCH

Where specified, vehicles, earthmoving machinery and mobile equipment shall be fitted with 45 mm pin diameter tow hitches.

*Comply / Not Comply

The tow hitches shall be connected to the main chassis.

*Comply / Not Comply

14. TOOLS

An hydraulic jack of sufficient capacity to lift the machine to enable changing of a flat tyre and a wheel spanner are to be supplied in a lockable toolbox.

*Comply / Not Comply

A power driven tyre pump (compressor) complete with pressure gauge and hose of sufficient length to reach all wheels is to be quoted for separately. This equipment is also to be housed in the lockable toolbox.

*Comply / Not Comply

15. BATTERY BOX

A robust, lockable battery box for each battery shall be provided unless the battery/ies is/are fitted in the cab or in a lockable engine compartment. Batteries shall be clamped and must be easily available for maintenance.

*Comply / Not Comply

16. FUEL SECURITY

All fuel tanks are to be secured with lockable fuel caps and anti-syphoning devices to prevent unauthorised removal of fuel.

*Comply / Not Comply

17. PAINTING

All metal work shall be sand blasted and thoroughly cleaned before painting.

*Comply / Not Comply

Any evidence of poor paintwork shall require the area to be stripped clean and repainted.

*Comply / Not Comply

The colours indicated below shall conform to the SANS 1091:2004 colour standard.

*Comply / Not Comply

Unless the equipment is imported in a fully painted condition, the final colour shall be Golden Yellow (B49).

*Comply / Not Comply

As an option, bidders must, where requested, quote separately for the painting of equipment bonnets in mid Brunswick green (E04).

*Comply / Not Comply

As an option, bidders must quote separately for the equipment to be painted to the 'West Coast' Specification. Existing painted surfaces must be flatted and a primer similar or better than "Carbomastic 15" must be applied to provide a dry film thickness of at least 125micron. The topcoat must be similar to or better than "Carboline 134" and must be compatible with the primer. The dry film thickness of the topcoat must be at least 40micron.

*Comply / Not Comply

18. IDENTIFICATION NUMBER

All equipment is allocated with a Departmental identification number consisting of up to 10 alpha-numeric characters.

*Comply / Not Comply

This number will be given to the successful Bidder indicated on the Departmental Order, who shall paint the number in white letters 75 mm high on a black background on the left hand side in a conspicuous position.

*Comply / Not Comply

In addition, a brass or copper plate with this number engraved or stamped in it in letters 10 mm high shall be permanently fixed to the instrument panel.

*Comply / Not Comply

19. VEHICLE RATING PLATES

Items shall be fitted with a plate on which is stamped the particulars required by the Road Traffic Act concerning mass, axle loading, etc. Should the item be fitted with attachments, the mass of the attachments should appear on the plate. The plate should be made of a non-corrosive material, permanently affixed to the machine and the letters should be at least 10mm high.

*Comply / Not Comply

20. REGISTRATION AND LICENSING ON eNaTIS AND NUMBER PLATES

Where applicable items are to be registered onto eNaTIS. If so requested, items are to be licensed in the relevant Departments name. This is to be quoted for separately. The relevant documentation to enable licensing will be supplied by the Department at the time of placing the order.

*Comply / Not Comply

Please note that delivery will only be considered complete and payment made when road going items have been completely delivered, registered onto eNaTIS and if requested, licensed into the Departments name.

Noted

Items may be required with number plates. The Department will inform the bidder of the relevant registration numbers at the time of placing the order. Number plates are to be quoted for separately.

*Comply / Not Comply

21. SERVICES

A pre-delivery service shall be carried out prior to inspection in the factory and the cost included in the bid price.

*Comply / Not Comply

A minimum of two services per machine shall be carried out on site by the successful Bidder.

*Comply / Not Comply

Bidders shall state at what intervals these services will be performed and shall give details of work to be done. All costs of the above, including travelling and accommodation costs shall be included in the bid price

*Comply / Not Comply

Bidders must quote separately for a full maintenance service plan for 1000h. 2000h and 3000h

*Comply / Not Comply

22. INSPECTION

The successful Bidder shall notify the Department of the date upon which the equipment may be inspected at the manufacturer/ agents prior to delivery.

*Comply / Not Comply

A minimum of seven days notice shall be given.

*Comply / Not Comply

Machines shall be complete in all respects at the time of inspection.

*Comply / Not Comply

The inspection will be conducted for the purpose of ensuring compliance with this specification, ensuring that a satisfactory standard of workmanship has been maintained and to check the functioning of all components where possible.

*Comply / Not Comply

23. COMMISSIONING

All machines shall be commissioned on the designated site of delivery by the successful bidder.

*Comply / Not Comply

The successful Bidder shall be present for a working period of at least eight hours. During this time the items shall be operated under full load and Departmental personnel shall receive operation and maintenance training.

*Comply / Not Comply

All costs of the above including travelling and accommodation costs shall be included in the bid price.

*Comply / Not Comply

24. MANUALS

The successful Bidder shall quote separately for the following manuals: Operator's Manual, Workshop Manual, Spare Parts Manual.

*Comply / Not Comply

These should preferably be electronic but hard copies will also be accepted.

The above manuals must be in English and must be written in such a way that they can be clearly understood by South African workers who are competent in English.

*Comply / Not Comply

The manuals must be delivered with the equipment.

*Comply / Not Comply

25. BROCHURES – DATA SHEETS – DRAWINGS

Bidders shall submit illustrated technical brochures of the equipment offered. Where brochures are not available, dimensioned drawings shall be submitted.

*Comply / Not Comply

Bidders shall submit manufacturer's engine performance graphs showing torque and power output, both plotted against rpm and fuel consumption.

*Comply / Not Comply

The Department reserves the right to disqualify bidders if they do not supply these brochures.

Noted

26. MANUFACTURERS AND AGENTS

Bids will only be accepted from the manufacturer or appointed agents for the make of equipment offered. These manufacturers and/or agents must themselves, in all 9 Provinces of South Africa:

Noted

- Carry the full warranty for the equipment offered.
 - Have a fully equipped workshop with competent staff to repair the equipment offered.
 - Have an adequate stock of spares to allow rapid maintenance of the equipment offered.
- 26.1.
- Offer a full field support service.

*Comply / Not Comply

*Comply / Not Comply

*Comply / Not Comply

*Comply / Not Comply

A list of all the manufacturers' branches and/ or appointed agents in South Africa must be submitted with the bid.

*Comply / Not Comply

A letter of appointment for agents from the manufacturer must be supplied with the bid.

*Comply / Not Comply

27. WARRANTY

A minimum warranty of 1 year or 1000h (whichever occurs first) is required on the full machine and all its components.

*Comply / Not Comply

Bidders must specify what additional warranty is applicable to for example, paint, drive train, etc.

*Comply / Not Comply

28. DELIVERY

Bidders must specify the time taken to deliver equipment after the placement of an order.

*Comply / Not Comply

Bidders must allow for delivery to all 9 Provinces. Should the price for delivery not be standard and included in the machine price, bidders must include a table showing the delivery charges to the following centres as a minimum. Cape Town (Bellville), Kimberley, Mafeking, Pietersburg, Bloemfontein, Pietermaritzburg, Bishu, Nelspruit and Pretoria.

*Comply / Not Comply

In addition a rate per kilometre for delivery must also be shown.

The delivery destination will be specified on the order.

*Comply / Not Comply

29. LUBRICANTS

All lubricants must comply with SABS, API or ISO specifications

*Comply / Not Comply

Bidders must supply a full list of all the lubricants required for the equipment offered showing the quantity required, the grade and specification.

*Comply / Not Comply

30. SAFETY

Where equipment has articulation, a locking mechanism must be supplied in compliance with ISO 10570:2004 to prevent accidental articulation. Locking bars must be securely attached to the machine to prevent them being lost.

*Comply / Not Comply

Where equipment has tipping or lifting functions, safety supports are to be fitted in compliance with ISO 13333:1994 to prevent accidental dropping of the tipping/ lifting components while the items are being worked on.

*Comply / Not Comply

An audible alarm shall sound when reverse gear is selected in terms of ISO 9533

*Comply / Not Comply

31. MASS

Where equipment mass is specified, this is to be in terms of ISO 6016:2008.

*Comply / Not Comply

32. TRAINING

If not included in the price, bidders are to quote separately for the on-site training of both the Departments operators and mechanics. The training should be for the minimum of one day.

33. QUANTITY

Note: Departments reserve the right to purchase only one or more items as required

Noted

34. KEYES / SECURITY

All the contractors must ensure that all keys or any other means of security, to be provided per vehicle must be non-generic in order to open, close and operate the vehicle/equipment individually. This must be to secure and safeguard the vehicles and equipment purchased by the end-users.