

**GENERAL SPECIFICATION FOR ROAD SWEEPER**

For: TRANSNET NATIONAL PORTS AUTHORITY

Project Name : Provision of New Road Sweeper

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1.0 GENERAL

The purpose of this specification is to outline the requirements on the intended user of the newly proposed road sweeper. The road sweeper is to be designed to have extension broom capable of removing litter, sand, debris etc. from street surfaces.

2.0 SCOPE OF WORK FOR THE REQUIRED ROAD SWEEPER

This specification covers the general requirements for the type of road sweeper required for use in the Port of Richards Bay. The road sweeper should be able to perform the following work:

- a) To Vacuum debris.
- b) Road sweeper with a broom that can be able to sweep next to the kerbs.
- c) Road sweeper that can be able suck a minimum of 6m³ of rubble and soil spillage.
- d) Road sweeper that can be able to cover a 10km road per day
- e) Road sweeper that can be able to discharge sucked spillage to a skip or truck for disposal.
- f) Road sweeper that can be able to sweep solids of size ranging from fines to debris
- g) The body of the truck to be protected and be able to withstand adverse weather conditions in the Port.
- h) Port roads have speed humps and elevated zebra crossing, therefore the brooms should be designed to suite.
- i) Road Sweeper must meet all SANS standards and transportation standards for the transport of spillage.

The supplier is required to provide a road sweeper that will be able to meet the minimum owner's requirements as stated above.

3.0 CHASSIS

- Must be diesel engine; shatterproof safety glass; dual two speed windshield wipers and washers; factory installed air-conditioning etc.



- Controls for all drive and sweeping functions shall be in-cab mounted
- Engine protection system utilizing coolant temperature, oil pressure, etc.

4.0 BRAKES

- The sweeper shall be fitted with a heavy duty braking system, which is capable of stopping and holding the fully loaded machine
- Full air, service complete, cam type
- Parking brake to be spring set with air release

5.0 STEERING

- Full power hydraulic

6.0 SWEEPING/CLEANING EQUIPMENT

- Hopper and all wear areas such as fan housing & pickup head shall be rust proof (resistant) with the use of highly corrosive resistance material such as stainless steel, aluminium, equivalent epoxy coated, replaceable liners, or other proven means
- The sweeper must have a sweeping speed of approximately 15 km/h (Adjustable Brush speed)

7.0 SWEEPING/CLEANING EQUIPMENT

- Fan compartment shall be acoustically lined/sound suppressed and include replaceable wear liner. Fan speed independent of vehicle speed.
- Fan compartment and all drive mechanisms shall be housed in an enclosed compartment for safety and additional sound suppression.



8.0 SIDE OR GUTTER BROOMS

- Located each side, centre of sweeper; hydraulically driven and hydraulic or pneumatic raised, lowered, suspended, adjusted and tilted with variable speed control inside cab controls.
- Power tilt gutter brooms on both sides controlled from inside the cab.
- Automatic return sweep settings
- The brooms shall be of a bristle type and shall be resistant to water, fuel and oil substances

9.0 VACUUM SWEEPER

- Minimum 10mm inside diameter pickup heads; smooth inside bore Nozzles to be aluminium or hardened mild steel; quick disconnect at pickup head.
- For safety nozzles must automatically raise when truck is placed in reverse.

10. PICK-UP SWEEPING HEAD

- For safety, head must automatically raise when truck is placed in reverse
- For performance, regenerative pick-up head must include a broom inside of the head

11. WATER SYSTEM

- Industrial grade polyethylene or stainless steel tank to be standard of manufacturer with filler capacity, strainer and tank level indicator. Minimum of four (4) spray nozzles on main broom, two (2) on each side broom, one (1) to dampen debris being swept by suction nozzle, and a front spray bar, or additional nozzles for dusty areas being swept, all spray nozzles controlled separately on console inside cab.



- Inside cab “low” water indicator required.
- Hydrant fill hose required, minimum 3.65m.
- A Stainless Steel mesh filter is required in the water system to prevent spray bars from clogging

12. AUTOMATIC LUBRICATION SYSTEM

- Complete with individually calibrated injector pumps and lines for each grease point. An electronic controller will allow for adjustment of lubrication cycles. A manual override button will provide for testing.

13. ENGINE, SWEEPER

- Minimum 4-cylinder turbo charged diesel; engine should have air-cleaner with pre-cleaner, full flow oil filter, variable RPM control, temperature and oil and coolant level shut-off, and emergency shut-off.
- Engine compartment to be easily accessible from left and right for service
- A shutdown shall be supplied which stops the engine when the hydraulic oil in the reservoir falls below the acceptable level required
- A shutdown shall be supplied which stops the engine when the engine temperature and oil pressure falls below the acceptable level required
- The fuel tank must have a capacity of 150 to 190 liters.

14. HOPPER

- Hopper shall be a minimum of six cubic meter (6m³) capacity
- For safety, hopper load indicator must be provided to warn Operator that chassis is loaded to capacity of chassis suspension rating
- Shall be easily accessible for inspection and maintenance
- Hopper liner backed by Lifetime Warranty



15. INSTRUMENTS, INSIDE CAB MOUNTED

- Water temperature, oil pressure and diesel gauges for all engines, ammeter, speedometer/odometer, tachometer, electric hour meter for all engines, broom hour meter. All instruments are to be located on dash of cab, centrally located for good vision from operator positions.

16. CONTROL PANEL

- Shall include all sweeping and auxiliary engine controls. The control shall be mounted forward in the truck cab to allow easy viewing and access to all controls from either operator's position.

17. ARROW BAR

- Arrow bar LED lighting and be mounted on rear of sweeper body
- Arrow Bar controls shall be mounted in cab
- A Life Last Coating or equivalent epoxy repair kit or bolt in replaceable wear liners shall be provided for additional protection of the entire interior surface in the hopper

18. SAFETY SYSTEM

- Backup alarm when transmission is placed in reverse, all sweep functions shall stop rotating and raise-up
- Two (2) top-mounted LED warning lights shall be supplied with light protector. One (1) LED warning light to be mounted rear of unit and one (1) LED warning light to be mounted rear of cab, but not on cab itself
- Two (2) flush mounted LED warning lights shall be installed in tailgate/bumper, bottom right and left hand corner
- Safety Vision or equivalent, rear vision camera and colour monitor



19. PAINT

- Painting to comply with Transnet corporate standard colours.
- Necessary reflective safety decaling shall be installed in the cab, body and rear.
- The paintwork shall comply with the Port corrosion protection specification and be covered by a ten (10) year corrosion guarantee.
- Transnet Logo is to be provided on each side of the sweeper.
- A data plate as required by the South African Road and Traffic Act shall be fitted.

20. SAFETY AND ENVIRONMENT

- The machine shall comply with the South African Occupational Health and Safety act, Act 85 of 1993.
- All surfaces where operating or maintenance personnel shall tread must be laid out with non-slip material.
- Suitable fire extinguishers shall be provided
- The road sweeper shall be fitted with a dust control system.

21. MAINTENANCE

- The sweeper must come with a service plan for 3 years
- Must come with a 5-year warrant for both Chassis and hopper
- All grease points must be clearly marked by means of a yellow circle of approximately 2,5 cm in diameter.
- Must be provided with two (2) spares of each brush
- Must be supplied with detailed maintenance plan with sufficient information to allow the owner to capture maintenance schedule in terms of inspections, servicing and replacement of parts, spares manual including technical data for each for each component information to be in English.
- Must provide list of service provider that are accredited to do maintenance and supply parts for the machine.



22. TRAINING

- Comprehensive training must be provided by the service provide to three (3) of the TNPA employees that will be operating the machine.
- The service provider must issue the TNPA employees with a certificate of competence once they are successfully trained.
- Must supply a training manual (in English)