

Section VI. Schedule of Supply

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1.0 List of Goods and Related Services (As per BoQ)

Item	Description	Unit	Quantity
1	Supply & delivery of Primary collection vehicles of 2.0 cum capacity garbage tipper with hydraulic tipping system	Nos.	40
2	Supply & delivery of secondary collection vehicles 4.5 cum capacity with hydraulic tipping system	No.	12
3	Refuse Compactor Vehicles for dry waste - 7 cum capacity (Blue coloured)	Nos.	3
4	Refuse Compactor Vehicles for dry waste - 11 cum capacity (Blue coloured) garbage compactor vehicle	Nos.	4
5	Market Waste storage metallic wheeled Bins -2.5 cum. Capacity	Nos.	100

2.0 Delivery and Completion Schedule

The delivery period shall start from the date of detailed supply order after signing of contract agreement.

Item No.	Description of Goods or Related Services	Delivery Schedule (Duration)	Location	Required Arrival Date of Goods and Completion Date for Related Services
1	Supply, transportation, local handling, delivery at site with all accessories of refuse collection vehicles complete as above.	i). Twelve (12) months in maximum of 4 consignments.	Shillong	<p>First consignment: by 100 days: <i>Satellite vehicles – 4.5 Cum cap.- 4 Nos, Garbage Compactor 7 Cum Cap. – 1 No, Garbage Compactor 11 Cum Cap. – 1 No, Metallic Bins 2.5 Cum Cap. – 25 Nos.</i></p> <p>Second consignment: by 180 days : <i>Satellite vehicles - 2 Cum cap.- 20 Nos, Satellite vehicles – 4.5 Cum cap.- 4 Nos, Garbage Compactor 7 Cum Cap. –2 Nos, Garbage Compactor 11 Cum Cap. –2 Nos, Metallic Bins 2.5 Cum Cap. – 25 Nos.</i></p> <p>Third consignment: by 270 days: <i>Satellite vehicles - 2 Cum cap.- 10 Nos, Satellite vehicles – 4.5 Cum cap.- 4Nos, Garbage Compactor 11 Cum Cap. – 1 No, Metallic Bins 2.5 Cum Cap. – 25 Nos.</i></p> <p>Fourth consignment: by 365 days: <i>Satellite vehicles - 2 Cum cap.- 10 Nos, Metallic Bins 2.5 Cum Cap. – 25 Nos.</i></p>

3.0 Technical Specifications

3.1 Preamble

The North Eastern Region Capital Cities Development Investment Program (NERCCDIP), financed by Asian Development Bank (ADB), includes a phased scheme for developing the basic infrastructure facilities in Shillong of Meghalaya state. The program includes Development of Solida Waste Management including development of landfill site and sold waste collection in the city area and laying of sewerage collection system and waste treatment facility, for Shillong. To supplement the solid waste collection system, Governmen of Meghalaya intends to procure a primary, secondary collection vehicles and workshop mechineries of different capacity under the program for which the present bid document is referring to.

3.2 Scope of Work

The scope of work under this contract package includes:

Design, manufacturing, fabrication, assembling, testing at manufacturing works, delivery, installation, trial run, testing, commissioning and satisfactorily handing over to end user including routine and preventive maintenance for a period of 12 months of pimary, secondary collection vehicles, compactors and Market Waste storage metallic wheeled Bins of following capacity and quantities, including necessary accessories, local handling, inland transportation, insurance and training of personnel etc complete in all respect.

- A.** Primary Collection Vehicles of capacity 2.0 cum garbage collection capacity tipper with hydraulic tipping system, Forty (40) numbers.
- B.** Secondary Collection Vehicles of capacity 4.5 cum garbage collection capacity tipper with hydraulic tipping system, twelve (12) numbers.
- C.** 7 cum capacity garbage compactor vehicle three (3) numbers.
- D.** 11 cum capacity garbage compactor vehicle three (4) numbers.
- E.** Market Waste storage metallic wheeled Bins -2.5 cum. Capacity (100) numbers.

3.3 Specifications for Primary and Secondary Collection Vehicles

3.3.1 Codes and Standards

All requirements of the latest Indian Traffic Rules/Acts and any other statutory rules and regulations in force shall be strictly adhered to.

It shall be responsibility of the bidder to procure the vehicle full filling all the requirement of transportation rule and obtain the insurance as required and compulsory.

It shall be the responsibility of the bidder to obtain necessary approval from the concerned inspecting authority and shall furnish necessary documentation for the same.

It shall be the responsibility of its bidder to obtain vehicle registration from all the concern department to operat the vehicle.

Vehicles shall be designed and tested to relevant Indian Standard and /or ISO, American, British or equivalent standard and code of practice.

Succesfull bidder shall submit the technical data and all the other relevant documents for approval of Employer, before procurement.

3.3.2 General Parameters

The intended primary and secondary collection vehicles shall be of approved make conforming to the requirements of relevant IS/BS. General requirements are specified in subsequent section.

3.3.3 Primary collection vehicles of 2.0 cum capacity garbage tipper with hydraulic tipping system:

Parameter	Minimum Requirement
Engine Model	Bolero Pick-up or equivalent with Engine No. MDI 3200TC H
Maximum Output	46.3 kW (63 HP) @3200 RPM
Maximum Torque	195 Nm @ 1500-1800 RPM
No. Of Gears	5 Forward Gears 1 Reverse Gear
Maximum GVW	2960 kg.
Payload Capacity	1250 kg.
Container Capacity	2.0-2.8cubic meters
Container Size	length-2540 mm Width: - 1700 mm Height –650 mm
Drive	Hydraulic Pump driven by the electrical power
Tipper Body	As shown in the drawing number MMD-260652-C-DR-SW-00-0006 (1 of 2)
Internal Volume	2.0-2.8cubic meters.
Material of construction	MS

The rear body will be as shown in the drawing. The loading will be done from top and top shall have a metallic cover. The tipping shall be done hydraulically with one hydraulic cylinder and directly unloaded into the hopper of the compactor vehicle.

The above are the general requirements and the bidder shall give his own design, specifications and other technical details at the time of submission of offer. The minimum requirement of dimensions shall be as shown in the **drawing number MMD-260652-C-DR-SW-00-0006 (1 of 2)**. The bidder may offer his own design.

The design of rear body shall be done in such a way that it shall get directly unloaded in the hopper of the compactor vehicle.

Succesfull bidder shall submit the technical data and all the other relevant documents for approval of Employer, before procurement/fabrication.

3.3.4 Secondary collection vehicles 4.5 cum capacity with hydraulic tipping system

Parameter	Minimum Requirement
Model	TATA LPK 909 Tipper with power steering or equivalent <ul style="list-style-type: none"> • 9.6 Ton GVW • Power Steering • 310 clutch GBS 40 gearbox Heavy Duty Aggregates • S cam Air Brakes • Turning Circle Radius of 5.1 metres • Deluxe Cabin • Fully Built Tipper Body of 4.5 cum capacity with metallic folding cover arrangement so that solid waste will not be visible during transportation
Engine	TATA 497 TCIC (Bharat Stage-II) or equivalent
Clutch	Single Plate Dry Friction Type, 310mm diameter with clutch booster
Gear Box	GBS 40, Synchronesh, 5F, 1R
Gear Ratios	1 st -8.02 2 nd -4.77 3 rd -2.63 4 th 1.66 5 th 1 Rev.8.29
Steering	Power steering
Brakes	Service Brakes-Dual Circuit full air S cam brake Parking Brakes-Spring actuated parking brake acting on rear wheels Engine Exhaust Brake-coupled with service brake
Frame	Ladder type Frame with riveted / bolted cross members
Suspension	Semi Elliptical Leaf Springs at Front and Rear with auxiliary springs at rear
Shock Absorbers	Hydraulic double acting telescopic type at front and rear
Wheels and Tyres-	Tyres- 8.25x16-16PR Wheel Rims- 6.00Gx16 SDC
Fuel Tank Capacity	90 Litres
Body & Tipping System	Body Capacity-4.95 cum. Tipping Angle- 53 Degrees Hydraulic Cylinder- Single Ram, Two Stage, Telescopic, Double Acting
Electrical System	System Voltage-12 Volts Alternator Capacity- 35 Amps Battery- 12V, 120AH Capacity
Performance	Min. Turning Circle Dia. - 10.2 metres
Weights	Wheel Base- 2775 mm Max. Permissible FAW (Kgs.) - 3250 Max. Permissible RAW (Kgs.) - 6350 Max. Permissible GVW (Kgs.) - 9600

The rear body of the vehical shall have minimum internal volume of 4.5 cum, with hydraulic tipping arrangement.

Mettalic Cover Arrangement: - The rear body of the vehicle shall have a metallic cover arrangement at the top so that refuse will not be visible during transportation. This folding cover arrangement shall be in one piece or two pieces and will open during loading/unloading and will be closed during transportation. It should have locking arrangement during loading/unloading and transportation.

The minimum requirement of dimensions shall be as shown in the **drawing number MMD-260652-C-DR-SW-00-0006 (2 of 2)** however the bidder may offer his own design.

Succesfull bidder shall submit the technical data and all the other relevant documents for approval of Employer, before procurement/fabrication.

3.4 Specification for Refuse Compactor Vehicles for dry waste - 7 cum capacity

(Note- The specifications given below are of general requirement.The bidder can give his own design alongwith his own specifications, drawings etc.)

Specifications are for Rear End Loading, Refuse Compactor, capable of collecting garbage/organic waste, compacting the same and transporting it to designated land-fills/disposal sites.

The compactor body shall be mounted on a LPT/SFC 909 TATA Chasis or equivalent.. The equipment shall have versatile capabilities and shall be effective and economical to operate for disposing organic waste which would include garden waste, market waste, domestic waste, commercial waste and others as generated in metropolitan cities and towns.

The compactor body shall be designed to allow loading of refuse:

- Manually,
- By an independent refuse collection, vehicle,

The compactor shall have the following main components:

- a) A container body of an overall volume 7 cu. m.
- b) An ejector plate with a multi stage, double acting hydraulic cylinder,
- c) A tailgate body with two numbers double acting cylinders to facilitate its the opening / closing operations,
- d) A set of carrier and packer plates, each operated by a pair of hydraulic cylinders,
- e) A suitably rated, vehicle's PTO driven, Hydraulic pump unit.

The equipment will have a loading height of about no greater than 1000mm.

The equipment will be designed for at least continuous 8 hours operations under average conditions without any ill effects on its components.It shall be responsibility of the bidder to procure the vehicle full filling all the requirement of transportation rule and obtain the insurance as required and compulsory.

Succesfull bidder shall submit the technical data and all the other relevant documents for approval of Employer, before procurement.

3.4.1 Vehicle Chassis

Vehicle chasis of compactor shall be TATA LPT / SFC 909 or any equivalent.

The vehicle chassis Cab Chassis with a factory fitted Auxiliary Power-take-off unit located on the vehicle's gearbox/PTO hydraulic pump, is required.

3.4.2 Mounting Of The Equipment

The Refuse Collection Body of compactor shall be welded to a skid / sub-frame, and shall be directly bolted on to the long-bearers of the chassis frame by means of shear plates.

3.4.3 Refuse Collection Body

The skid mounted Refuse Collection Body of compactor shall have minimum volume of 7 cu.m and of rectangular cross section. The body shall be fabricated from steel – as per IS 1079 / IS 2062. A hydraulically operated ejector plate shall be located at the forward end of the container body. At the rear end, shall be fitted a hinged tailgate assembly, consisting of a hopper, a slider and packer plate assembly which constitutes the compacting unit.

The top, bottom and sidewalls, as also the tailgate, shall be reinforced with steel rectangular box sections. An automatic tailgate locking arrangement shall be incorporated in the system.

General technical requirements are as follows:

- Material: Alloy steel for all machined components
- MS Plates of IS-2062 Grade 'A'
- Volumetric Capacity: 7 cu.m, volume
- Sides: 3mm thick
- Floor: 4mm thick
- Reinforcement: Steel rectangular box sections

3.4.4 Ejector Block

A perfectly aligned Ejector Panel of compactor shall be fitted to effect both the unloading and compactions of the refuse collected via a hydraulic control unit.

The ejector block shall slide over synthetic guide blocks in longitudinal guides. Its movement shall be regulated by a multistage, double acting hydraulic cylinder.

The Ejector Panel shall be suitably strengthened to withstand the compaction and unloading of heavy loads.

3.4.5 Tail Gate Assembly

The tail gate assembly of compactor shall form the main and the most important part of the equipment. Tail Gate Assembly

It shall constitute following main groups:

- Tailgate and Hopper,
- Slider Plate,
- Packer Plate

3.4.5.1 Tailgate with Hopper

The tailgate with hopper is the basic structure in which shall be housed the functional parts such as the slider and the packer plates.

Heavy-duty hinge pins located on each side of the body shall be fix the tailgate to the compactor body. An automatic type tailgate-locking device of a robust design shall be provided on either side of the tailgate to ensure proper locking of the gate. The device shall be strong enough to withstand the reactionary load

acting on the tailgate at the time of compaction. A double lip type, one-piece rubber gasket seal cord shall be fitted across the bottom width and Vertically in the assembly to render the gate leak-proof. Grab handles and standing platforms shall be provided on each end of the tailgate.

A steel hopper of a minimum 0.5 cu m capacity shall be welded between the sides of the tailgate. The height of the hopper shall not exceed 1100mm to 1200mm to facilitate manual loading.

Two (2) nos. hydraulic cylinders, anchored on each side of the container shall be provided to facilitate lifting and lowering of the tailgate. These cylinders shall also actuate the automatic tailgate-locking bolts through a slotted hinge mechanism. Hose burst valves shall be provided to disallow the tailgate from descending in an event of the hydraulic system failure.

3.4.5.2 Slider Plate

The slide plate shall be adequately dimensioned and reinforced and shall be of a robust design. It shall be fabricated to withstand harsh operating conditions.

It shall run on sliding blocks and shall be actuated by two (2) nos. hydraulic cylinders. It shall be fabricated from high quality steel

3.4.5.3 Packer Plate

The packer plate shall be of a robust design and shall have strongly reinforced bearing arms onto which shall be fitted the hydraulic cylinders.

The packer plate shall carry out the primary compaction in the hopper during its swivel cycle, at the end of which its movement continues to transport the refuse in the collection body.

3.4.5.4 Hydraulic System and Drive

3.4.5.5 Hydraulic Pump Drive & Oil Circuit

A hydraulic pump of adequate capacity to meet the operational requirements of the complete system shall be provided with the equipment for compactor.

The pump shall be either directly mounted on the truck's gearbox or shall be driven via the auxiliary PTO, depending on the compatibility of the arrangement provided by the chassis manufacturer. The hydraulic pump shall be of a gear / axial piston type. Engaging and disengaging of the PTO shall be from the driver's cabin.

In general hydraulic pump drive & oil circuit shall meet the following minimum requirement.

- Make: WIPRO or equivalent
- Type: Fixed Delivery, Axial Piston
- Displacement: 44 cc/rev
- Rated speed: 1500RPM
- Flow at Rated Speed: 64 Lpm
- The pressure oil routed through two (2) nos. independent circuits.
- The large circuit used for the purpose of compaction, and
- The small circuit used to feed the hydraulic system of the ejector panel, tailgate lifting and locking arrangements.

3.4.6 Miscellaneous fittings for Compactor

In general the compactor shall be fitted with all the accessories required for its completeness and proper functioning. Some of the general fitting requirements are as follows:

A) Hydraulic Cylinder

A total of seven (7) nos. hydraulic cylinders shall be provided to carry out proper functioning of compactor. It shall be provided in the following sequence;

- Two (2) nos., double acting hydraulic cylinders for slide plate,
- Two (2) nos., double acting hydraulic cylinders for packer plate,
- Two (2) nos., double acting hydraulic cylinders for tailgate lifting and auto locking arrangement, and
- One (1) no., double acting, 3-stage cylinder for the ejector panel block.

The cylinders shall be manufactured by an ISO-9001/9002 certified company and documentary evidence confirming the same shall be submitted at the time of approval of technical data sheet.

All cylinders shall be double acting and cushioned, manufactured from ST-52 Grade steel and seals of reputed ISO-9000 manufacturer will be used.

All cylinders shall be provided with lubricated bearings and shall be of a standard reputed make such as that of Wipro, Canara Hydraulics, Hyva, or equivalent.

B) Mobile Control Valves

One (1) no. 2-bank direction control valve block located at the forward end of the Refuse Collection Body and behind driver's cabin shall be provided to facilitate lifting and lowering the tailgate and movement of the refuse ejector plate.

One (1) no. 2-bank direction control valve block, located at the rear, left hand side end of the Refuse Collection Body to facilitate movement of the Carrier Plate, Packer Plate for compaction. The valves shall be designed so as to allow operations by two hands only to avoid risks of accidents.

The mobile Control valves shall be of a standard reputed make such as that of Valvoil of Italy, Bucher, Germany or equivalent

C) Tank & Filters

The hydraulic oil storage tank shall have a volumetric capacity of a minimum 100 litres and shall be equipped with a suction strainer, steel cartridge type return line filter, filler/filter/breather for the tank and a level indicator.

It shall be located at the forward end in between the Refuse Collection Body and the driver's cabin.

In general the tanks and filter shall meet the following minimum requirement

- Capacity: 100 litres, minimum
- Steel: 3 mm, steel as per IS - 1079
- Return line Filter: 25 Microns
- Suction Filter: 125 Microns

D) Genral -Operation

The collected refuse shall be manually emptied/unloaded into the hopper of the compactor from the bins/containers or directly from the tipper type refuse vehicles.

The Compactor shall move out on its garbage collection trip with the container completely empty, and the ejector panel positioned at the rearmost end of the container.

The packer plate shall be initially in its closed position opens hydraulically.

The slider plate shall hydraulically move downwards to a preset position so as to allow the packer plate to shut the tailgate hopper cavity.

By the reversal direction of travel of the packer plate and slider plate hydraulic cylinders, the unloaded garbage inside the hopper shall swept and simultaneously pull into the container body.

The garbage shall be compacted against the ejector plate as the carrier plate ascends.

The ejector plate's hydraulic circuit shall enable the plate to adjust its position automatically depending upon the pressure exerted on it, until it reaches the end of the stroke of its multi stage double acting cylinder.

The complete tailgate assembly shall hydraulically be lifted using the two double acting cylinders. In this process of opening the tailgate's locking device manually / automatically shall release to allow the gate to open freely.

The ejector block shall unload and compress the garbage within the container body, by hydraulically pushing the garbage out.

On completion of the unloading cycle, the tailgate shall be lowered to its closed position.

This system facilitates shall be easy and quick for unloading of the container without affecting the overall stability of the equipment.

E) Surface Preparation and Finish

The container exterior shall be spray-painted with two (2) coats of superior quality, anti-corrosive primer and two coats of enamel metal paint of a reputed make. The colour shade shall be that of the customer's choice.

To resist corrosion due to weak acids, the interior shall be coated with two (2) coats of anti-corrosive gray epoxy paint.

The minimum requirement of dimensions shall be as shown in the **drawing number MMD-260652-C-DR-SW-00-0007 (A)** however the bidder may offer his own design.

Succesfull bidder shall submit the technical data and all the other relevant documents for approval of Employer, before procurement/fabrication.

3.5. Specification of Refuse Compactor Vehicle for dry waste - 11 cum capacity (Blue coloured) garbage compactor vehicle

Construction:

General:

The rear loading compactor shall be mounted on suitable 16 Ton GVW chassis. The compactor shall comprise of three main parts.

1. The body and ejection barrier
2. The hooper and compaction hydraulic unit at rear body
3. The bib lifter Mechanism.

The packing system will comprise of two moving plates the packing plate and the sweeping plate.

The packing plate will travel angular track, and at the end of the stroke, sweeping plate will be activated and clean the hooper, at the end of its travel, packing plate start its reverse travel and start compressing the refuse into the body. It's called one complete of compaction.

The entire compaction system shall be operated at designed speed with auto throttle.

1. The body and Ejection Barrier.

A. The Body:

- With optimum volumetric capacity of 11 cum, the body is constructed from high tensile steel ST 52. "one piece" rolled side sheets reinforcement by front and rear stiffeners, pressed integrated channel and "Kneel" type floor. The Rear entry floor plate is constructed from Hardox 450.
- The cylindrical appearance of Body shape not only gives improved aesthetics but increase body capacity by 1-1.5 cum per body size.
- Body manufactured from one piece rolled and pressed steel sides that extend body life and also increase the efficiency of the entire body concept and provide ready space for signage.
- The Kneel shaped body floor, fitted with under- floor sump and floor channels ensure 100% of leachate collection in the floor sump at the front of the body. It also ensures clean discharge of solid waste.

B. Tailgate:

- Optimized 2.4m³ swept volume capacity, resulting in fewer packing cycle giving high rate packing garbage and also gives benefits of reduced wear, minimize fuel consumption, time and noise.
- Full 1.9m uncluttered loading width facilitates to accommodate bulky material to be packed.
- Low rake rail height of 1.05 m facilitate of manual and versatile bin-lift mounting
- Tail gate sides are made up of high tensile abrasive resistant Hardox 450 steel and formed with integrated guide channel to guide the packing mechanism.
- Integral full height body/hooper seal fitted to prevent liquid leakage from bottom edge and hopper sides.
- Reduce overhang for improved weight distribution and manoeuvrability. Rear over hang be within the RTO norms i.e. 60% of the wheel base of the chassis.

C. Packing Mechanism

- Proven two plate fabricated packer/sweeper design. Manufactured out of high tensile abrasive resistance Hardox 450 steel.
- Packing mechanism slides in integrated side channels and provided with low friction self lubricating ertalon LFX guides.
- Heavy duty and well corresponding hydraulic cylinders ensure the efficient sweeping and packing cycle, within a nominal cycle time of 23 seconds.
- We provide 3 stage compaction enabling better compaction ratio.

D. Refuse ejection Barrier:

- Ejection barrier plate is manufactured from high abrasion resistant Hardox 450 steel and formed in such a shape gives smooth and unobstructed discharge of garbage.
- Heavy duty Ertalon LFX self lubricated guides allow the barrier to move smoothly along the rail, provided within the body.
- Multi-Staged double action telescopic hydraulic cylinder and its geometrical mounting gives efficient ejection and retraction travels, without any side load on sliding guides.

E. Hydraulic system:

- PTO Mounted closed coupled standard gear pump delivers 82 LPM at 100RPM.
- Body mounted oil tank which optimizes the mounting space, equipped with Return line filter, Breather, level indicator and shut off valve.
- Full flow 10 micron return line filter controls contaminant levels.
- Engine speed is maintained by electro-pneumatic throttle control system automatically when hydraulic power consumption increases.
- Electro-Pneumatic operated spool valves control all system functions separately with inbuilt dump valve from retraction process.
- Automatically adjusted high and low pressure system, gives efficient and smooth working of the system and protect the system from stress and obtained better fuel efficiency.
- Inverted fitment of sweeping cylinder with spherical bearings, protect the piston rod form direct contact of acidic waste/garbage.
- Heavy duty inverted packing cylinders mounted outside the hopper, gives more clearance in hooper loading area and protect the piston rod form direct contact of acidic/garbage.
- Roof mounted hopper/tail gate lift cylinders, get well protected from accidental damage double check valve gives extra safety in case of hose failures.

F. Electric system:

- Fully integrated logical system and printed circuit board located on the body in a IP66 weather proof panel.

G. Hydraulic Cylinder.

- Heavy duty double acting inverted sweeping cylinder fitted with maintenance free spherical bearing -2 nos.

- Heavy duty double action inverted packing cylinder mounted outside the hopper, clear of the loading area-2 nos.
- Roof mounted heavy duty double acting hopper lift cylinder-2 nos.
- Heavy duty double acting cylinder for bin lifting- 2 nos.
- Heavy duty multi stage double acting telescopic cylinder for ejection plate-1 no.
- Maximum no of cylinder is 09 nos(Double acting)

Sr.No	Description	Specification
01	PTO	Preferable vehicle Manufacturers
02	Hydraulic Pump pressure	Min.170KG per cm square
03	Packer plate HYD cylinder stroke	548 mm
04	Packer plate HYD cylinder internal diameter	100 diameter
05	Tailgate Hyd. cylinder internal diameter	70 diameter
06	Tailgate Hyd. cylinder stroke	726 mm
07	Bin lifer cylinder internal diameter	80
08	Bin lifer cylinder stroke	250mm
09	Carrier plate cylinder internal diameter	110
10	Carrier plate cylinder stroke	670
11	Ejection cylinder	Telescopic type
12	Ejection cylinder No of stages	04
13	Ejection cylinder internal diameter	140
14	Ejection cy. stroke	3455
15	Hydraulic cylinder	Hyva make
16	Hyd. valve	Dual flow vane pump
17	Oil capacity	125 litres
18	Size of suction filter	140 microns
19	Size return line filter	10 microns
20	Size of ejection plate	920X1740X2000
21	Cycle duration for bin lifer	25 Seconds
22	Duration of Ejection	28 Seconds
23	Pump and PTO mounting	Directly coupled without any intermediate shaft.

The above equipment shall be mounted on client supplied chassis with PTO like TATA 16 ton GVW and 4200mm wheel base.

The minimum requirement of dimensions shall be as shown in the **drawing number MMD-260652-C-DR-SW-00-0007 (B)** however the bidder may offer his own design.

Succesfull bidder shall submit the technical data and all the other relevant documents for approval of Employer, before procurement/fabrication.

3.6 Specifications for Market Waste storage metallic wheeled Bins -2.5 cum. Capacity .

The Metallic wheeled garbage bins will be used for collection and storage of refuse from Market areas located all over GSPA. The bins shall be kept at various locations for collecting the solid waste and will be transferred into compactor by fully automatic system or will be unloaded in a waiting truck at the nearest Secondary collection Point. These bins shall generally meet the following requirement:

1. The desing of the bins shall be as shown drawing number MMD-260652-C-DR-SWM-00-0005. However bidder may suggest any changes which could benefit to employer with meeting the minimum requirement and cost effective
2. The manufacturing process shall be top class fabrication with high precision.
3. Marking: Each bin complying with the requirements, shall be duly marked with the following details.
 - Year & month of manufacturing
 - Sr. No.
4. Each bin shall have SMB letter and logo on front side screen printed, the details of which will be given at the time of placing the order.
5. The supplier shall submit valid Certification copy along with the Tender document. (The certification copy will be latest of 2011).
6. The typical drawing number MMD-260652-C-DR-SWM-00-0005 is attached. However the succesfull bidder shall submit his detail drawing and brochure/literature for approval to Engineer Incharge before procurement. The drawing and brochure/literature shall specially indicate the nominal load lifting capacity of the bins, and the nominal weight of the bins.
7. The bins shall have no obvious damages, no cracks/leaks, large flashes or sharp edges.
8. The bin shall have a cover hinged at one end which shall open freely while unloading.
9. The bin shall have two side lifting Trunion compatible for being lifted by universal bin lifters mechanism as per the drawing number MMD-260652-C-DR-SWM-00-0005.
10. The entire surface shall be first cleaned by sand blasting or any other appropriate method and given a coat of anti- corrosive primer. Bituminous or any other anti-Corrosive paint shall be applied to the inside surface of the container and outside surface of the container finished with two or more coats of synthetic enamel paint of specified shade and colour. The container should have suitable arrangement for lifting, emptying & placing on vehicle.
11. For proper draining of water, arrangement shall be made by providing 6 nos. of 20mm dia. Drain holes, kept at the bottom.
12. The specifications given are only indicative and the bidder shall be required to submit the detailed technical and dimensional drawing of the bins along with the sample piece before procurement to the Engineer Incharge for approval. The detailed technical and dimensional drawing (along with the sample piece) shall be scrutinised by the engineers of the department and shall be approved in principle after having detailed clarifications. However, this does not absolve the contractors from the performance of the bins as per the contract conditions. The drawing should contain the general details such as material, thickness, manufacturing process, details of wheels etc.
13. Since, the parameters given above are for guidance only, as such position of wheels, position of trunion, size, shape, position may vary on actual.

The Matallic Garbage Bins shall conform to following specifications:

Parameter	:	Minimum Requirement
Volume	:	2.5 Cum
Total Height	:	1476 mm
Total Width	:	1585 mm
Total Depth	:	1000 mm
Lifting System	:	Universal
Thickness	:	Side Plate- 3.0 mm Base Plate-4.0mm End Plate-3.0 mm Press Channel 75 x 40 x 3 mm
Lid	:	1.6mm sheet metal windows (2 nos) fixed firmly on metal hinges with handle made 10mm steel bars
Construction Technology	:	High Precision Fabrication
Material	:	Metal (MS/GI)
Processing	:	Mass colouration with UV protection
Corrosion Resistance	:	100 %

However for reference only following drawings are enclosed.

Sl.No	Drawing Title	Drawing no.
1	Regional Setting Plan & Location of GSPA	MMD-260652-C-DR-00-SWM-0001
2	Map of GSPA Showing project area (outside SMB)	MMD-260652-C-DR-00-SWM-0002
3	Metallic container of 2.5 cum capacity for market and transfer point	MMD-260652-C-DR-00-SWM-0005
4	Garbage Tipper Vehicles 2.0cum	MMD-260652-C-DR-00-SWM-0006 (Sheet 1 of 2)
5	Garbage Tipper Vehicles 4.5cum	MMD-260652-C-DR-00-SWM-0006 (Sheet 2 of 2)
6	Refuse Compactor Vehicles (7.0 cum capacity)	MMD-260652-C-DR-00-SWM-0007 (A)
7	Refuse Compactor Vehicles (11 cum capacity)	MMD-260652-C-DR-00-SWM-0007 (B)