

INDIAN RAILWAYS

RAIL COACH FACTORY, KAPURTHALA

SPECIFICATION FOR TRUCK MOUNTED GARBAGE COMPACTOR

Specification No. Mech/M&P/2400/02 Ver-01

1 INSTRUCTIONS TO TENDERERS FOR FILLING TECHNICAL BID:-

- 1.1 The bidder must submit the technical offer as per the specification and offer their clause wise comments. All the information as asked for must be given accordingly. e.g. wherever a parametric value is sought, it should be furnished, similarly, if a brochure or drawing or sketch is warranted the same need to be provided.
- 1.2 Unless otherwise stated, latest alterations/ revisions of specifications/ standards/ drawings shall be applicable. In respect of safety standards and environmental standards relevant to the machine, the machine manufacturers shall ensure compliance with international (CE/ISO/DIN/JIS)/National standards (IS) (where applicable).
- 1.3 Tenderers should offer and quote for all the specified concomitant accessories, as these are considered essential for commissioning and utilization of the machine. Even if bidder does not recommend the purchase any of these accessories upfront, the price must be quoted for comparison purposes and their recommendation/suggestion indicated in the offer. Tenderers should also quote for optional accessories, spares and consumable spares as asked in the specifications.
- 1.4 In case, any item is required in sets, please specify nos./pieces per set. This is essential for proper technical evaluation of the offer. Offers received without this may be considered as incomplete and liable to be rejected.
- 1.5 The bidder should quote only for the specified make of sub-assemblies and equipment wherever specified. Makes of sub-systems other than the specified ones will normally not be acceptable. In case, some other make is quoted, specific reasons for the same including its features/advantages over specified makes must be brought out in the offer along with the supporting documents.
- 1.6 In case there is a contradiction in any information provided (some parametric values given in the specification and those given in the brochure or some other document enclosed by the tenderer), unless specifically mentioned in the deviation cum confirmation statement , the values as given in the specification shall be taken as confirmed by the tenderer and offer evaluated accordingly.

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1.7 The Purchaser may accept internationally accepted alternative specifications which ensure equal or higher quality than the specifications mentioned in the Technical Specification. However, the decision of the Purchaser in this regard shall be final. A copy of the alternative specifications offered should be sent along with the offer. The Tenderer should also furnish "Statement of Deviations" from tender specifications along with the offer.

1.8 Purchaser reserves the right to verify the details submitted by the bidder by actual site visits.

1.9 Other term and condition of the contract will be as per Indian Railway Standard Conditions of Contract.

2.0 **DESCRIPTION:-**

2.1 Truck Mounted Garbage Compactor with all standard accessories as per Specification.

3.0 **SCOPE:-**

3.1 The scope of the specification covers design, manufacture, supply, erection, commissioning and proving out of Truck Mounted Garbage Compactor at Rail Coach factory Kapurthala Punjab. Truck chassis TATA LPK 1618 approx. 3625 mm wheel base and Truck Cab with cowl.

3.2 The Tenderer will fabricate and mount the truck cab on the chassis. Truck cab will have seating capacity for three persons including driver.

4.0 **PURPOSE AND CAPABILITY:-**

Mechanized Garbage Compactor shall be able to perform the following activities:-

4.1 Door to door collection of solid waste within RCF Township and workshop area.

4.2 Transporting of collected solid waste to nominated dumping sites without spilling.

4.3 Dumping of collected solid waste with minimum manpower and establishment costs, maximum efficiency and without spilling of refuse/scrap/debris during collection, transportation and dumping.

4.4 Capacity of Garbage Compactor shall be 14 m³ (approx.) and 10 ton carrying capacity.

4.5 The equipment shall be capable of working in hot, humid and dusty atmosphere. Temperature variations may be from -2°C + 50°C. Humidity may be up to 98 %.

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5.0 DESIGN STANDARDS:-

5.1 The design of Garbage Compactor mounted on truck chassis will conform to relevant Indian Standards.

5.2 All hinged components shall be provided with suitable bearing, bushes to eliminate rattling noises.

5.2.1 Details of hinged component used on the Garbage Compactor and how rattling noise has been eliminated during transportation, shall be provided by the bidders.

5.3 Garbage Compactor shall be fully enclosed type and there shall not be spill refuse in route. Details of construction shall provided by the bidders.

5.4 Loading height of Garbage Compactor shall be approx.800 mm from the ground level.

5.5 The Base plate of Garbage collection area should be of 6 mm thick M.S sheet

6.0 TRUCK CAB:

6.1 The tenderer will fabricate and mount the truck cab on truck chassis TATA LPK 1618 approx 3625 mm wheel base. Truck cab will have following features:-

6.2 Seating capacity for three men including driver.

6.3 The seats will be cushioned type and upholstered with best quality of foam leather and 100 mm thick Dunlop/ Sleepwel cushion, with suitable cushioned back rest.

6.4 The windscreen frames will be of fixed type having maximum vision. The wind screen glass will be of 5.5 mm toughened quality.

6.5 The interior of cab should be decorative and well furnished.

6.6 The truck cab should have proper lighting. At least two lights should be provided on roof of cab.

7.0 HYDRAULIC EQUIPMENT:

7.1 The hydraulic equipment provided shall be of best quality and reputed make to ensure excellent performance with minimum maintenance.

7.2 All hydraulic cylinders shall be double acting, made of ST-52 high tensile steel.

7.3 Hydraulic pump shall be of Vickers / Rexroth make.

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- 7.4 Pressure relief valve shall be provided for protection against over pressure.
- 7.5 Detail of control valves shall be furnished in the offer.
- 7.6 The tank capacity for hydraulic oil should be approximately 200 liters.

8.0 RTO REQUIREMENTS:

8.1 The chassis should be procured by the successful tenderer in the name of Dy Chief Plant Engineer-III, Rail Coach Factory Kapurthala.

8.2 Garbage Compactor shall be fully equipped for road use and shall be provided with Head Lights, Parking Lights, Tail Light, Directional Light Electric horn etc. as standard equipments to enable the vehicle to comply with all traffic regulations.

8.3 After completion of work, the vehicle will be sent for RTO's Road Fitness Certificate. The tenderer will carry out all such modifications required to obtain RTO's certification free of cost.

9.0 SURFACE TREATMENT & PAINTING:

9.1 All the steel parts will be thoroughly degreased and cleaned with wire-brush or by other suitable means and then two coats of red oxide zinc chromate primer will be given before two coats of synthetic enamel paint. The refuse collector will be painted in suitable shade (to be approved by RCF/Kapurthala) with synthetic enamel paint, so as to ensure an elegant, smooth and even surface. The DFT of paint should be 10 micron minimum. The tenderer shall submit three suitable colour schemes to enable RCF/Kapurthala to approve one of the colour schemes.

10.0 DESTINATION INDICATORS:-

10.1 Fixed type destination board shall be provided at the front of the Truck Cab. Destination board will provide in Hindi and English as follow: -

Govt. of India
Rail Coach Factory, Kapurthala.

The tenderer will write Rail Coach Factory, Kapurthala in Hindi and English on both sides of Container body.

11.0 INFORMATION TO BE FURNISHED BY THE TENDERER:

The tenderer shall furnish the following information along with the offer:

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- 11.1 Technical details of the Truck Cab & Refuse Collector as well as their major equipment:
 - 11.1.1 Construction and design features.
 - 11.1.2 Operational features.
 - 11.1.3 Performance features.
 - 11.1.4 Salient technical features of hydraulic equipments fitted on the Refuse Collector.
 - 11.1.5 Salient features of Controls.
- 11.2 Detailed drawing of Garbage Compactor duly indicating various dimensions and layout of major equipments.
- 11.3 Illustrative literature giving salient features of the equipment offered.
- 11.4 Any other information which in the opinion of the tenderer is essential for consideration by the purchaser.

12.0 **SPARE PARTS: (OPTIONAL)**

- 12.1 List of recommended spares for normal maintenance of the equipment (except chassis) for 3 years along with their rates shall be furnished. The rates of these spares will not be considered for tender evaluation.

12.2 The tenderer shall quote rate separately item-wise for following spare parts for maintenance.

S.No	Description	Qty.
1.	Filters	01 Set (consisting of all filters fitted in the equipment)
2.	Hose Pipes	01 Set (consisting of all hose pipes fitted in the equipment)
3.	Belts	01 Set (consisting of all belts fitted in the equipment)
4.	Oil Seals	01 Set (consisting of all oil seals fitted in the equipment)
5.	Clutch Plate	01 No.
6.	Pressure Plate	01 No.
7.	Main Hyd. Pump	01 No.

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13.0 ACCESSORIES:

13.1 List of standard accessories which will be supplied with Mechanized Garbage Compactor shall be furnished.

13.2 List of optional accessories which may be useful to improve the working efficiency of Mechanized Garbage Compactor duly indicating price of each item shall be furnished.

14.0 SPECIAL FEATURES:

The tenderer shall separately explain the special features if any, for the equipment offered by him.

15.0 DEVIATIONS:

15.1 The tenderer shall clearly state if the offer does not confirm to any of the technical or design specification. In such case the details of the alternative arrangement offered, if any, duly indicating its advantages shall be submitted.

16.0 INSPECTION:

Stage-wise inspection will be done by consignee during the fabrication of Refuse Collector. The firm should intimate the consignee before starting the fabrication and during fabrication in following stages.

- i) On starting the fabrication after receipt of chassis.
- ii) After fabrication of cabin portion.
- iii) After fabrication of Container portion without painting.
- iv) After complete painting of refuse collector.

17.0 COMMISSIONING AND PROVING TESTS:

17.1 The tenderer or his agent will be required to inspect the consignment at the consignee's premises before unpacking is done and carry out a joint check of the receipt of components to avoid subsequent complaints regarding short shipment or transit damages

17.2 For the purpose of erection, testing and commissioning of the equipments at site at Rail Coach Factory, Kapurthala (Punjab) India, the tenderer will arrange his own adequate number of personnel, material including consumables, tools and equipments etc. However, RCF shall provide necessary compressed air, water and electric supplies free of cost for the installation, commissioning and prove out of the machine. The tenderer shall arrange erection, commissioning and testing of the equipment at site at Rail Coach Factory, Kapurthala, within 15 days from the date of receipt of supplies.

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17.3 After successful commissioning, the supplier will prove the performance of the equipment meeting the tendered specification to the consignee at consignee's premises within 15 days of commissioning of the machine.

18.0 **WARRANTY:** The warranty period shall be as per IRS conditions of the contract.

19.0 **TRAINING:**

19.1 Technical experts of the tenderer during commissioning of the equipment will fully and adequately train operation and maintenance staff nominated by the consignee at the consignee's premises i.e. at Rail Coach Factory, Kapurthala (Punjab).

19.2 The tenderer will also be required to train for 4 Railways staff nominated by the consignee at the manufacturer's actual works free of cost in regard to maintenance and operation of the equipment. However, boarding and lodging cost of such staff during training will be borne by the consignee.

20.0 **TECHNICAL LITERATURE:-**

20.1 One copy of the printed illustrative catalogue showing various features of the equipment and its element must be enclosed with each copy of bid.

20.2 The successful tenderer will also have to furnish 4 copies of spare parts catalogue giving the part list number of each component with exploded views and assembly drawings of major assembly and 4 copies of maintenance manual, trouble shooting guide, operation manual and all electrical circuit diagrams to the consignee. The bidders should provide a list of literature, they will supply along with the equipment. The technical literature shall be provided in English language only.

21.0 **SERVICING AND WAREHOUSING FACILITIES:-**

21.1 The tenderer will clearly spell out in the offer the facilities available with him or his agent for providing adequate after-sales service in India during warranty period. The complete details such as organization for after sales service, availability of technically competent engineers and warehousing facilities for spares should be clearly indicated. Bidders not offering complete servicing/repair facilities in India to ensure quick response to maintenance/ servicing calls are not likely to be considered.

21.2 After the warranty period, the manufacturer or his agent shall agree to provide service supports for trouble shooting and obtaining spare parts. The manufacturer shall be obliged to provide spare parts required by the Purchasers for a period of 15 years from the date of delivery of the machine at the ultimate destination to safeguard against obsolescence.

21.3 Tenderer who are OEM, shall undertake to supply spare parts for a period of

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expected life of machine. Alternatively, tenderers shall also submit undertaking from OEM for supply of spare parts for a period of expected life of the machine

21.4 Tenderers shall indicate the list of spares required for maintenance of the machine beyond warranty period. Current cost of such spares and current service charges for the items of work of repair of machine shall also be indicated

21.5 During warranty period, the supplier or his authorized agent shall attend for break down as soon as possible, but in no case later than 72 hours of receipt of intimation of the breakdown. The supplier has to furnish proper guarantee to this effect.

22.0 **REFERENCES:**

List of users and their addresses to whom such or similar equipment has been supplied during the last five years, shall be furnished by the tenderer to prove his capability to design, manufacture and supply the equipment. The tenderer shall also furnish a brief report on the design, manufacturing and testing facilities available at his works.

SCHEDULE-I

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Sr. No.	Description	Required	To be furnished by bidders
1.	Capacity Volumetric and carrying capacity of refuse collector	14 Cu. Meter (approximately)	
2.	Size of Garbage Compactor (Lx H x W)	7.4 M X 3.3M X 2.5M (approximately)	
3.	Furnish technical details of Hydraulic equipment like type, Size, Make operating pressure, etc.		
4.	Maximum speed at which the Garbage Compactor will be capable of running on road.	Max. 50-80 Km/hr.	
5.	Loading, unloading and operations fully automatic	Required	
6.	Timing required for: Loading Cycle Unloading Cycle	40 Second (Max.) 70 Second (Max.)	
7.	Loading Height	Max. 800 MM	
8.	Type of Hydraulic Oil used	Grade 68	
9.	Sump Capacity	Min. 200 Ltr.	
10.	Achievable refuse density.	600-700 Kg.	
	Compactions Mechanisms: How fast Compaction Mechanism Works Details of compaction mechanism to be furnished by bidders.	30 Seconds (Max.)	
11.	Compaction ratio.	1:1.5 (Minimum)	
12.	Engine:-		
i	Model.	Cummins B 180 20	
ii	Type.	Water-cooled, turbo-charged diesel engine	
	Max engine output.	180 HP at 2500 rpm.	
iii	Max torque.	650 Nm (65 mkg) at 1500 rpm	
iv	Capacity.	5883 CC	
v	Emission norms.	Euro III	
13.	Gear Box:-		
i	No of gears.	6 forward 1 reverse.	
14.	Suspension:-		
i	Type.	Semi elliptical leaf spring at front and	

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		rear.	
ii	Shock absorber.	Hydraulic double acting telescopic type.	
15.	Frame:-	Ladder type heavy duty frame with riveted / bolted cross members, side members are of channel section,	
16	Brakes:-		
i	Service brake.	Fully duplicated, full air S-CAM brake system.	
17.	Clutch:-		
i	Type.	Single plate dry friction type.	
18.	Chassis dimension:-		
i	Wheel base (mm).	3625.	
ii	Overall length (mm).	6220.	
iii	Max width (mm).	2440.	
19.	Vehicle performance:-		
i	Speed	50 to 80 kmph	
ii	Gradability	30%	
iii	Minimum turning circle diameter in mm	14500.	

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