

SPECIFICATIONS FOR TRAILER MOUNTED SELF-CONTAINED COMPACTOR **COMPAK®**

I) Mobile Self-Contained Compactor on Trailer

The tenderer shall design, fabricate, supply, install & commission Mobile self-contained Compactor on Trailer at various sites in city and suburbs.

The Mobile self-contained Compactor Trailer shall consist of the following components.

COMPACTOR ON TRAILER

(A) Trailer

1. The semi-trailer chassis shall be manufactured from fabricated sections of suitable size to take total load of 30 tonnes minimum including the dead weight of the Trailer.
2. The trailer shall have two axles with eight tyres of size 10.00 x 20 x 16 PR
3. The axles shall be dead axles and preferably the brake drum, the back plates and other braking equipment shall be same as that provided on Ashok Leyland / Tata vehicles.
4. The chassis shall be provided with 4 nos. of leaf springs Assemblies with adequate nos. of leaf springs to absorb the shocks.
5. Arrangement shall be provided on the chassis to have heavy duty special alloy steel(Jost or equivalent) king pin for attaching the trailer with suitable 5th wheel coupling (Jost or equivalent) on Ashok Leyland / Tata Tractor chassis.
6. Two speed landing gear (Jost or equivalent) shall be provided to the trailers.
7. The length of the chassis shall be such so as to accommodate rear body with the length of maximum 6500 mm. The total volumetric capacity of the rear body should be 20 cu m and the width at the rear end should not exceed 2500 mm. The rear body should carry net refuse 20 tons after compaction.
8. The necessary brake connections with palm couplings shall be provided to match with the existing trailers available with MCGM.
9. All the lights, reflectors, hand brakes & any other items as per R.T.O. requirements shall be provided on the trailer.
10. A Solid Bumper with towing arrangement at the rare shall be provided as per R.T.O. requirements.
11. Mudguards shall be provided over both the axles as per R.T.O. requirements.
12. The prime mover shall be easily detachable from the trailer whenever necessary.

(B) Compactor:-**(a) General:-**

1. The compaction force shall be min 220 KN (i.e.22 tonnes) approx.
2. The cycle time of the compaction shall be max 38-second approx.
3. The volume of the waste compacted shall be 2 cu.m. / per cycle approx. (Manufacturer's rating.)
4. The ram penetration shall not exceed 230 mm and height & width of the pressing ram shall be restricted to 600 and 1960 mm respectively.
5. A 2 cu.m. size compactor preferably 1600 mm x 1800 mm approx. shall be provided for charging of refuse.
6. The charging height of the refuse shall not exceed 2800 mm approx. (Including height of trailer.)

(b) Compactor chamber:-

The compactor head shall be powered by a remote hydraulic power unit.

1. The charge box floor shall be minimum of 10 mm thick plate and shall be supported by longitudinal members intermediate bracing.
2. Remote power pack shall be equipped with a 7.5 KW totally enclosed fan cooled 415 Volts 50 Cycles 3 phase electric motor directly coupled to a suitable rotary hydraulic pump. On this power pack, all electric control circuits shall be enclosed in a IP 54 rated control box. Mounted in the face of this box shall be the control station to consist of start, reverse and stop buttons. The remote power pack unit shall be connected to the compactor head by two simple to use hydraulic quick connectors. The remote power pack shall be installed at site by the tenderer.
3. The power pack shall be capable of completing a full cycle in 38 seconds and exerting force of 220 KN on the ram blade face. It will not have pressure switches which could fail.
4. The compactor head shall be furnished with a cyclic control system that utilizes a hydraulic cylinder in conjunction with a solid state circuit that operates at minimum pressure levels except when actually packing solid waste.
5. The compactors shall be as per ANSI/equivalent standard & should be listed with the Solid Waste Management Association of the manufacturer's country.
6. The compactors head shall be provided with a hydraulic cylinder at the front end for unloading the compacted refuse by tipping. The cylinders shall be hard chrome telescopic type to lift minimum 30 tonnes of load (PARKER / HYDRODYNE / HYVA / WIPRO or superior make).

7. A full enclosure shall be welded over the entire compactor opening area where the refuse is changed. The enclosures shall have a lockable door at the top and sides of the full enclosure to allow feeding the refuse into the charging chamber.
8. Arrangement should be provided in the rear body for any liquid during compaction, to seep around the bottom or sides of the ram & shall drain back into the container by means of a passageway underneath the charge box floor (Quick clean tank). In the container this liquid should drain beneath by specially designed passages into an internal plumbing system. Liquid should then be routed through four interconnected drains at each corner of the unit to assure free drainage through four-inch couplings & ball valves regardless of the inclination of the slope on which the trailer is installed. This is for drainage of excess liquid from the container thereby increasing the net payload weight (Stream Lined).
9. The area behind the ram shall be accessible for washing by means of access panels.

(c) Container:-

1. Floor, sides & top shall be of 5mm thick approx., constructed of Steel Plate continuously welded to sides preferably Sailcore Corten or equivalent imported weather resistant steel. The steel shall be given the necessary forming or adequate superstructure support (stiffners) of structural tubing to withstand the compacting pressure.
2. Door shall be top/side hinged and provided with heavy duty full seal. The seal shall be easily replaceable with only hand tools. It should be water tight till its life.
3. A door closing mechanism controlled by 1 or 2 ratchets, one ratchet located on each side of container, shall be provided in order to properly compress the door seal. In addition two screw jack type locks shall be provided at bottom. The attached drawing is for reference only.

(d) Odor Reducing Device:-

An electrically operated ozone generating unit shall be provided on the compactor trailer for pleasant environment. The ozone odor control unit shall be a remote system which shall pump the ozone produce through a hose with a 'Y' fitting that shall lead to both the container and the compactor chamber.

II) Loading platform cum Attendant's Chowky – 20 Nos.

- a) The Tenderer shall design, fabricate supply, transport and install the loading platform cum Attendant's Chowky at various sites in city and suburbs.
- b) The Tenderer shall refer the tender drawing only for reference purpose. The tenderer shall submit their design and drawing for approval.

- c) The Tenderer shall fabricate the Loading Platform cum Attendant's Chowky as follows :
- i) Attendant's Cabin cum Electrical supply and remote hydraulic system room with loft.
 - ii) Loading platform with folding platform.
 - iii) Steps for climbing.
 - iv) Intermediate platform
 - v) Furniture

The chowky shall be all steel chowky made of square and rectangular hollow sections as shown in the drawing. The drawing is only for your reference. The chowky shall be prefabricated at the tenderer's factory and shall be transported to the site completely assembled and installed with the help of cranes without damaging the chowky.

- i) The Attendant's cabin cum electric supply cum Remote hydraulic system Room along with loft shall be closed on three sides by G.I. corrugated PVC Precoated sheets of 18 gauge. The 4th side shall also be closed but shall have a door of size 1.8mt x 0.75mt. of the same material i.e. G.I. corrugated PVC Precoated sheets of 18 gauge with angle or tube frame of 40 x 40 x 5 mm and fixed with 3 heavy duty Brass / Stainless steel hinges. The door frame on outside shall also be fabricated of 40 x 40 x 5 mm angle/tube. Two Windows of size 0.9mt x 0.75mt made of 16 swg. Aluminium sections openable type shall be provided, one on door side and one on the adjoining side for proper ventilation. A Jali guard shall be provided in both the windows. The Jali guards shall be made of 10 mm square rods. In one of the Jali guards an opening of 150 x 150mm with full lift type arrangement shall be provided.

The door shall be provided with aldrop and handles on both sides of good quality and stoppers at the bottom. The glass used in windows shall be 5mm wire reinforced glass. The soft shall be provided of good quality Marine ply of minimum size of 25mm. Fitted on M.S. angle/tube frame of 40 x 40 x 5 mm. with a provision of pipe in the centre for mounting the ceiling fan. An arrangement shall be provided for fixing tube light in the cabin as well as in loft.

Weather sheds of proper size with fixing brackets shall be provided on the door and windows.

A Jali frame window openable type on the platform side shall be provided on the loft to facilitate to keep tools and implements.

- ii) The loading platform shall be fabricated of M.S. chequered plates (5mm thick) welded on all sides with proper subframe. The subframe shall be fabricated of M.S.I. Beam of 75 x 40 or rectangular pipes of suitable size below the chequered Plates. On one side shall be closed by G.I. Corrugated PVC precoated sheets of 18 gauge with proper structure and on the opposite side shall be provided with foldable extended platform, fitted on hinges, of size 0.45 x 1.2mt fabricated from M.S. chequered \plate with proper subframe of rectangular pipe. The hinges shall be of Brass (heavy duty) & shall be bolted. The extended platform shall be

provided with pipe railings 40mm dia. G.I. pipe on either side. A proper locking arrangement shall be provided to lock the folded extended platform in folded position. A canopy foldable type above the extended platform shall also be provided of suitable size. An arrangement shall be provided for fixing of tube lights on the loading platform at two places.

- iii) The steps leading to loading platform shall be convenient to climb up & down by the loaders. It shall be fabricated of M.S. chequered plates of 5 mm thick and height of each step 200 mm approx. & welded to M.S. channel ISMC 75 x 40 on either side. The steps shall be rounded at the edges as shown in the drawing. The steps shall be provided with supporting pipe railing of 40mm. G.I. pipe on either side of the steps except at the intermediate platform. An arrangement shall be provided for fitting tube light above the steps.

The Complete roof shall be fabricated of G.I. PVC precoated corrugated sheets having proper inclination for draining out the rainwater. The corrugated sheets of roof shall be mounted on proper frame made of rectangular pipes of 100 x 50 x 4 & 50 x 50 x 4 mm. A proper drainpipe of size 150mm dia PVC with valley gutter of Gl. / PVC shall be provided for draining of rainwater at the rear with proper holdings.

A front guard / fascia of G.I. PVC precoated corrugated sheets on the roof on all sides shall be provided of 400mm height approx. The fascia shall be mounted on proper structure of rectangular pipes of 50 x 50 x 4 mm thick.

The complete loading platform cum attendant's chowky shall be self supporting and shall have six vertical columns / posts fabricated of 120 x 120 x 4 mm rectangular pipes. These shall be connected by horizontal members of size 100 x 50 x 4 mm at the top as well as the bottom by full welding. The vertical columns shall be provided with base plates of 12 mm thick having holes for foundation bolts. The vertical as well as the horizontal members and the other subframe structural member shall be of one piece and no joints shall be allowed.

- iv) An intermediate platform at a height in between the loading platform and ground and ground shall be provided at the side of the steps. It shall be fabricated from M.S. Chequered plate 5 mm. thick with proper structure / subframe.

The complete loading platform cum attendant's Chowky shall be painted with two coats of anti – corrosive primer and two coats of enamel paint.

A plastic moulded unbreakable small table and 2 chairs shall be provided in the Attendant's cabin of suitable size of reputed make (Nilkamal / Prima) as per directions of departmental engineers.

A plastic moulded unbreakable rack of suitable size shall be provided in the cabin for keeping registers and records.

III) Electrical Work – At 20 Chowkies:

- a) The Tenderer shall fabricate supply and fix Meter cabin of T.W. as per the standard requirement of supply authorities i.e. BEST/BSES/MSEB. The approx. size of the Meter Cabin shall be 6ft x 3ft x 1 ft and made of teak wood plank of 20 mm thick, the back plank shall be of 25 mm thick. This is only to give an idea.

- However the tenderer will enquire with the concerned supply authorities for their standard requirement.
- b) The tenderer shall provide earthing pit of 600 x 600 x 10 swg. G.I. Plate and 10 swg G.I. Wire. This shall be as per the standard requirement of the supply authorities i.e. BEST/BSES/MSEB.
 - c) The tenderer shall also provide & lay 100 mm dia G.I. pipe 'B' class of suitable length for the supply cable to be laid by the supply authorities i.e. BEST/BSES/MSEB as per the standard requirement of supply authorities.
 - d) The Tenderer shall provide necessary four pole 3 phase neutral switch fuse unit 415 V/32A.
 - e) The Tenderer shall provide & fix necessary lighting system including lighting fixtures complete with tube light & accessories, light control switches receptacle units with control switch units, lighting wires and conduits & other similar items necessary to complete lighting system, lighting fixtures supports, lighting main distribution boards, multi core cable for flood lighting.
 - f) The tenderer shall provide and fix suitable size, 4 core x 4 sq. mm PVC insulated armoured power and control cable for flood lighting.
 - g) The Tenderer shall provide & fix:
Tube light fixture with 40 W fluorescent Lamp – 5nos. of Philips make ceiling fan (High breeze) – 1 no. of Crompton make.
Sodium vapor lamps with fixture 150W with 2 earthing terminals – 2 nos. of Philips / Bajaj make.
Lighting wire for light fittings and 5 A. receptacles of 250/440 V, Single Core PVC insulated unarmoured with standard copper conductors of 1.5 sq.mm. – of Finolex or equivalent make.
Flood lighting wire for flood light and 15A receptacles shall be of 2.5 sq.mm.
Receptacle 5 A – 2 Nos. of another make.
Receptacle 15 A-2 Nos. of anchor make.
Switches – of anchor make.
 - h) The earthing and lighting protection system shall cover supply & fixing of earthing conductors, earth electrodes & accessories.
 - i) The tenderer shall supply and fix portable emergency light for connection to 240 V, 50 Hz Single phase supply. It should automatically illuminate on failure of normal A/c supply. It shall be suitable for incandescent lamp upto 40 W or fluorescent lamp upto 20 W.
 - j) The Tenderer shall issue the necessary Test Certificate as per the requirement of supply agency i.e. BEST/BSES/MSEB.
 - k) The tenderer shall arrange to get the necessary power connection of 15 HP from the electric supply agencies at the 20 sites. The necessary deposits / fees required to be paid to the electric supply agencies i.e. BEST/BSES/MSEB shall be paid by MCGM. The follow up & liaison work for getting the electric supply at the site shall be done by the tenderer.

IV) Prime Movers – 10 Nos.

The tractor chassis shall be suitable to pull a load of 35 tons (GTR shall be 35 tons). It shall be provided with driver's cabin, synchromesh gear box with min six forward & one reverse gear along with P.T.O. & Pump unit. The engine shall be 6 Cylinder water cooled and developing suitable B.H.P. The chassis shall be provided with power steering and fifth wheel coupling. The chassis shall be provided with 7 Nos.x 10.00 x 20 tyres of 16 PR rating, (i.e. 6 fitted and 1 spare with rim) of MRF, Dunlop, CEAT, Modistone make only. The brake system for semi trailers shall be through palm coupling joint as in the present tractor compactor trailers.