

# GUIDELINES FOR PRIMARY COLLECTION OF SOLID WASTE FOR TMA HALA



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## **GUIDELINES FOR PRIMARY COLLECTION SYSTEM OF SOLID WASTE IN TMA HALA**

There are many systems used in the world for primary collection system. Gulberg Town of Karachi introduced a very simple primary collection system; this idea is new and can be replicated in other Towns of Sindh.

The collection system is based on a simple moveable drum, householders usually drop their waste in the bins where the TMAs solid waste collection Lorries collect the waste from bins as shown in the figure II. Following criteria will be considered during the design of communal bins, points of placement and collection of waste from bins

### **Solid Waste Bins**

- Ordinary drums shall be used for the collection of primary solid waste
- Drum volume is (220 liters)
- Number of drums required shall be acquired from the rate of generation of waste and density of waste
- The drums shall be placed at fixed points
- The drums shall be painted both inner and outer side to avoid corrosion as waste contains moisture contents
- Drums shall be fixed with L-Shape pipes; one end of pipe is fixed with ground while other end of pipe is roller supported as shown in figure I.
- The drums are fixed above the ground level, so drum can remain moveable to collect the waste manually as shown in figure,
- The space between the drum bottom and ground shall be adjusted in such a way that small children cannot move and see inside the drum for safety purpose and the sweepers can easily remove waste from bin to their trolleys
- The space between the drum bottom and ground shall be given in such a way that dogs, cats and other vectors cannot enter into the drums

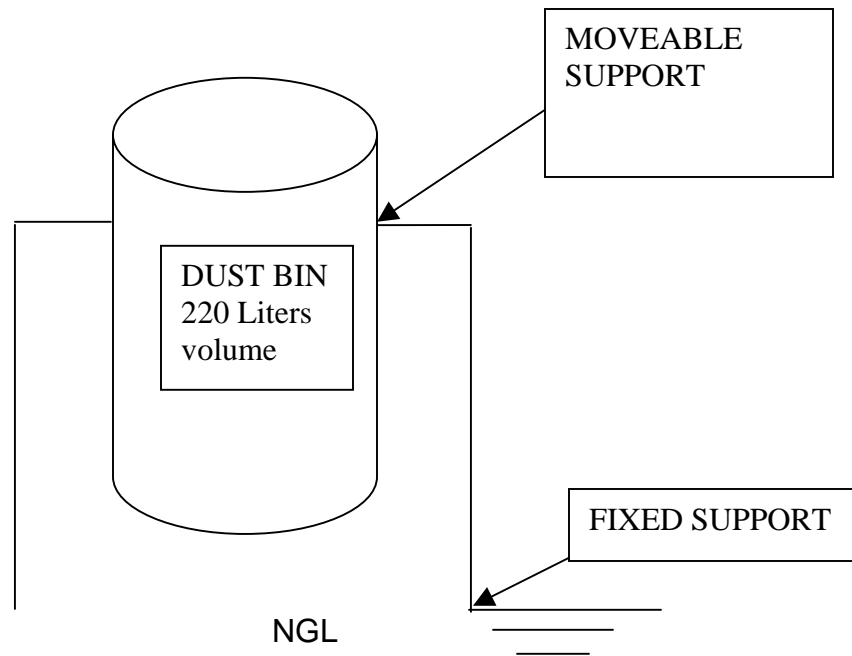


Figure I: Primary Collection system used in Gulberg Town



Figure II: A view of moveable solid waste collection bin at Gulberg Town

### **The estimation of number of bins required can be done by**

- Volume/capacity of bin should be known
- Density of waste should be known
- Number of houses which will use the facility
- Number of person x Rate of generation of Waste
- Total Tones of waste produced
- Density of waste
- Total volume of generated waste daily / Volume of drum = number of bins required

### **Placement of bins**

- The bins shall be placed away from public places to reduce the possibility of interaction of vectors (flies, mosquitoes, rats, cockroaches and others) to human beings.
- The bins shall not be placed in front and near the main gates of mosques, schools, hospitals and public community centers etc
- Closed moveable bins shall be placed at market areas and at picnic points.
- The bins shall be emptied atleast once in two days
- The bins shall be placed in such a way that most of the household have easy access to the bins to drop their waste
- Community shall be involved for the identification of suitable places for bins
- One or more than one bin can be placed at one point, depending on the rate of generation of volume of waste production

### **Collection of waste from bins:**

- Waste shall be collected manually from moving the bin from top towards ground
- Waste shall be collected in baskets manually by sweepers and transported to the designated sites through tractor trolley
- Waste bin can be emptied atleast once in 2 days of time

### **Advantages of the moveable bin collection system**

- This system is very cheap and can be implemented easily
- This system encourages people to drop their waste in bins to manage cleanliness of their neighborhood areas
- Easily operated and low maintenance cost

- The waste produced in houses will easily be removed
- With the system of collection indiscriminate depositing of waste in front of homes, and in streets will not take place
- It will reduce open burning, reduce contamination to surface water bodies
- The collection system will reduce fly borne and water borne diseases
- Sweepers can collect the waste from one point and easily shift the waste from bin to hand trolleys and tractor trolleys
- It will improve the collection system of waste and increase the municipal solid waste collection

**Note:** The same collection system can also be implemented at drainage schemes to collect and transport the floating particles