

Fitzpatrick s.a.l.

Metal Works & Fire Rated Doors



NRNT2. E317138

Fitzpatrick s.a.l.

Centralised Garbage Collection System

Garbage Chutes - Linen Chutes - Debris Chutes

Supporting Eco-Friendly Society with Safety



Urban Civilization & fast growing cities are forcing to construct Hi-rise residential and commercial buildings, complexes.

In this changing scenario, the garbage collection from every floor & its disposal has become a tedious job.

Garbage chutes are the means to overcome the above problem with ease & utmost hygiene.

Garbage chutes can be installed in

- Residential, commercial buildings and malls.
- In any duct, common lobbies, landings, staircase mid-landings, utility ducts, dry balconies and kitchens.
- If on floor level, Intake Hoppers shall be at every floor level.
- If at mid-landing, Intake Hopper shall be at alternate floor level.

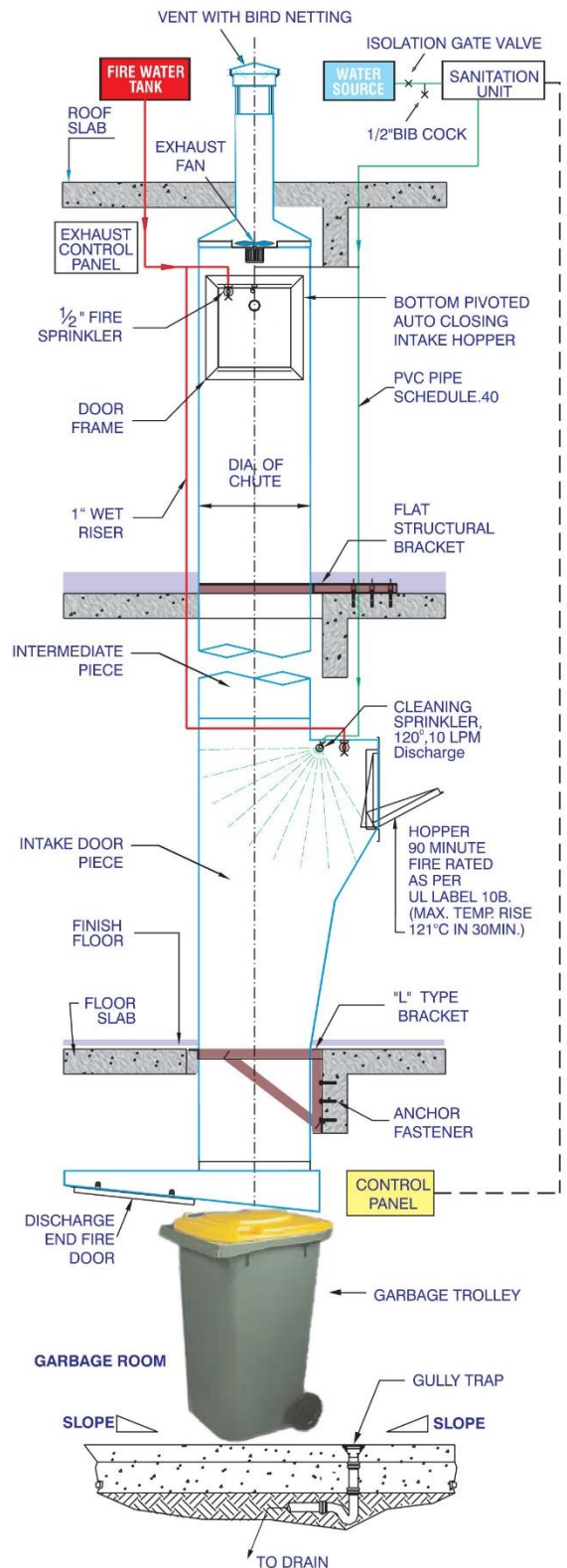
Advantages of Garbage Chutes

- Facilitates total building garbage collection at one single point.
- Garbage disposal with ease & utmost hygiene.
- Reduces Power consumption.
- "Dry" & "Wet" garbage separate collection possible.
- Widely used all over the World.
- Reduces manpower.

Salient features of Fitzpatrick Chutes

- Manufactured & Installed as per BS 1703:2005, NFPA 82.
- Weather proof Stainless Steel construction.
- Sanitation system for internal cleaning of chutes.
- Cleaning operation by control panel in garbage room.
- Disinfectants can be sprayed.
- Exhaust system to give minimum 20-40 air changes/hr.
- Intake Hoppers are 90 minute fire rated as per UL Label 10B.
- Auto closing Intake Hoppers.
- Discharge end fire door.
- Available in different sizes.

Schematic Layout of Garbage Chute for Typical Floors.



Selection of Chute Diameter

Type of building	Linen chute dia.
Residential	450/600 mm
Commercial	600 mm
Malls	750 mm
Hotels / Hospitals	750 mm

Note : Different sizes are available as per customer need.

- Garbage generation varies, thus garbage bag size varies.
- As per garbage bag size, intake hopper size is selected.
- As per hopper size dia. of chute is selected.
- Laundry/Linen chute typical dia. 750mm.

Hopper size for std. chute

Chute Diameter		Hopper Size	
		Bottom Pivoted	Side Hung
450 mm (18")	Typ. Size	12" x 15"	12" x 15"
	Max. Size	12" x 15"	12" x 15"
600 mm (24")	Typ. Size	15" x 18"	15" x 18"
	Max. Size	18" x 18"	16" x 18"
750 mm (30")	Typ. Size	21" x 21"	21" x 21"
	Max. Size	24" x 24"	24" x 24"
Mfg. as per BS 1703:2005, NFPA 82.			

Material of Construction

- Stainless Steel SS 304 / SS 430
- Thickness – 1.2, 1.5, 2 mm depends on dia of chute.
- Fibre, Plastic chutes are not allowed considering fire hazard, as per BS/NFPA Codes.
- Galvanized steel gets corroded, thus should not be used.

Floor Frames

- Total chute weight is divided on each floor.
- Different types to suit site conditions.
- MS Galvanized structural frame fabricated from 40 X 40 X 5mm angles.
- Provided on every floor to support chute.
- Anchor fastened with floor / beam.

Sound Dampener Coating

- Min. 2mm thick sound deadener coating to reduce sound, if required

Intake Hoppers

- Top opening, bottom pivoted hopper for garbage chute.
- 90 minute fire rated as per Underwriters Laboratory (UL) USA.
- As per UL Label 10B. Max. temperature rise of 121°C in 30min. (of unexposed surface)
- Hopper can be interlocking for "One user at a time" concept.
- Hoppers can be fully automatic pneumatically operated, ADA compliant.
- Fixed with chute in face with front wall.
- Laundry chute hoppers – Side hung, left or right hand opening.



Vent

- Removes foul smell and gases generated and exhaust above roof level.
- Installed at roof level, operated by control panel.
- Designed to give min. 20/40 air changes/hr.
- Reduced diameter vent or full diameter vent.
- Exhaust min 1.2 - 2 meter above roof level.
- Flashing can be provided if required.

Brush Cleaning System (optional)

- Designed to clean vertical height of chute.
- Pre-assembled system operated from top by control panel.
- A stiff nylon brush is automatically lowered & raised by electric motor.
- Brush scrapes internal surface.
- Water sprayed by sprinkler from top during the cleaning operation.

FIRE SAFETY

Sanitation System - Heart of chute

- Cleans the chute from inside, to maintain hygiene.
- Installed at roof level & operated by Control Panel in the garbage room.
- 120° solid cone profile discharge sprinklers provided at every intake level.
- Different sprinkler at every level keeping discharge constant irrespective of changing inlet pressure as per building height.
- 2 minutes of cleaning cycle every day.
- Water and disinfectants are sprayed during cleaning cycle.
- PVC Sch 40 piping is used along the length of the chute.



Discharge

- Chute shall directly discharge into trolley or compactor.
- Diversion shall not to be allowed.
- Max diversion of 15° with vertical allowed as per codes.
- Discharge end fire cut off door.

Garbage Trolley

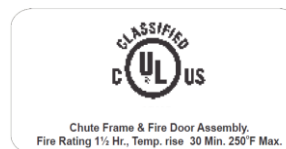
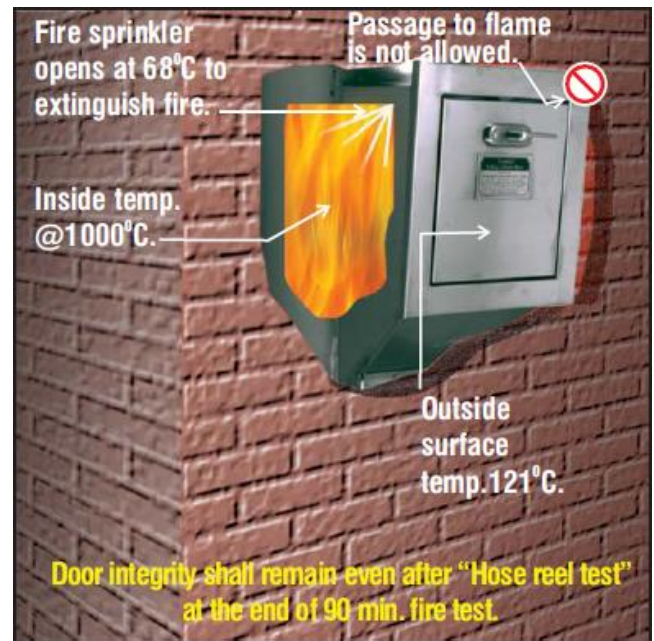
- Available in plastics / galvanized steel.
- Capacity selected as per building requirement.
- Std. capacity :- 240 / 330 / 660 / 770 / 1100 liters.
- Customized fabricated trolleys available.

Fire Protection in Garbage / Linen Chutes

Manufacturing and installation codes and standards.

BS 1703:2005 seen along with BS 476 part 22, NFPA 82.

Fire Inside the Chute



Fitzpatrick CHUTE HOPPER

90 Minute fire rated As per UL Label 10B.

(max. temp. rise 121°C. in 30 min.)



Switches, Industrial Control – Component



Fitzpatrick s.a.I. Chutes

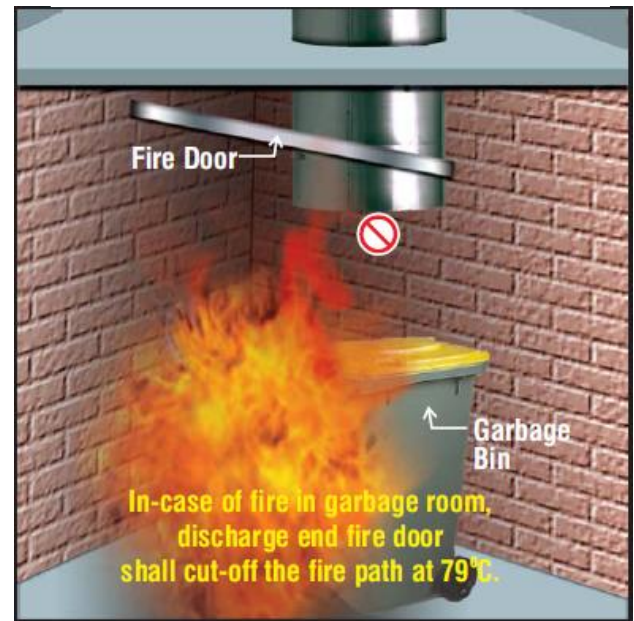
meet the requirements as per codes



Fire Outside Chute on Floor



Fire in the Garbage Room



Requirements as per below

Intake Hopper

- 90 Minute Fire Rated.
- Passage for flame is not allowed
- If fire exposed side temp. is @1000° C. then unexposed side temp. shall be 121°C.
- Door should not fall open after Hose reel test at the end of fire test.
- Inter-locking or segregated chute hopper controllers are also UL Listed for user safety.

Fire Sprinklers

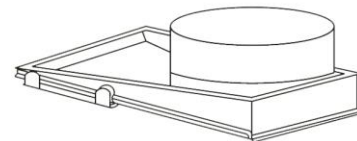
- Opens at 68 °C. to extinguish fire.
- Installed at top and bottom intakes and in between alternate floors.
- 1/2" IPS (BSP) female threading ready to be connected to 1" wet riser of fire protection system.

Discharge End Fire Door –

- In case of fire in garbage room this shall cut off fire path at 79 °C.

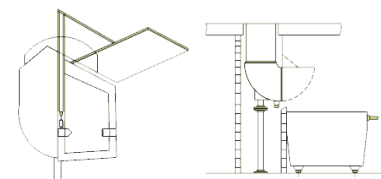
Discharge Door ' C ' Intake Hopper

- Our "C" type discharge end fire rated door is mounted on bearing, is held by 79 C. fusible link at top of slope. In case of fire in garbage room, fusible link melts and fire door closes the upward path of chute restricting heat transfer. Mainly used in garbage Chutes.



Discharge Door ' D ' type

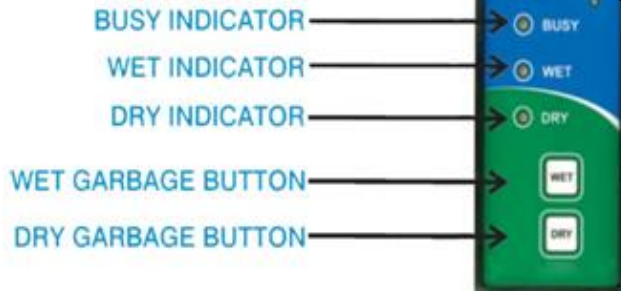
- Our "D" type discharge end fire rated door is held horizontally against gravity by 79 C. fusible link. In case of fire, fusible link melts and fire door closes the upward path of chute restricting heat transfer mainly used in Linen Chutes.



Segregated Garbage Collection System



Switches, Industrial Control – Component



TYPICAL FLOOR

Segregation

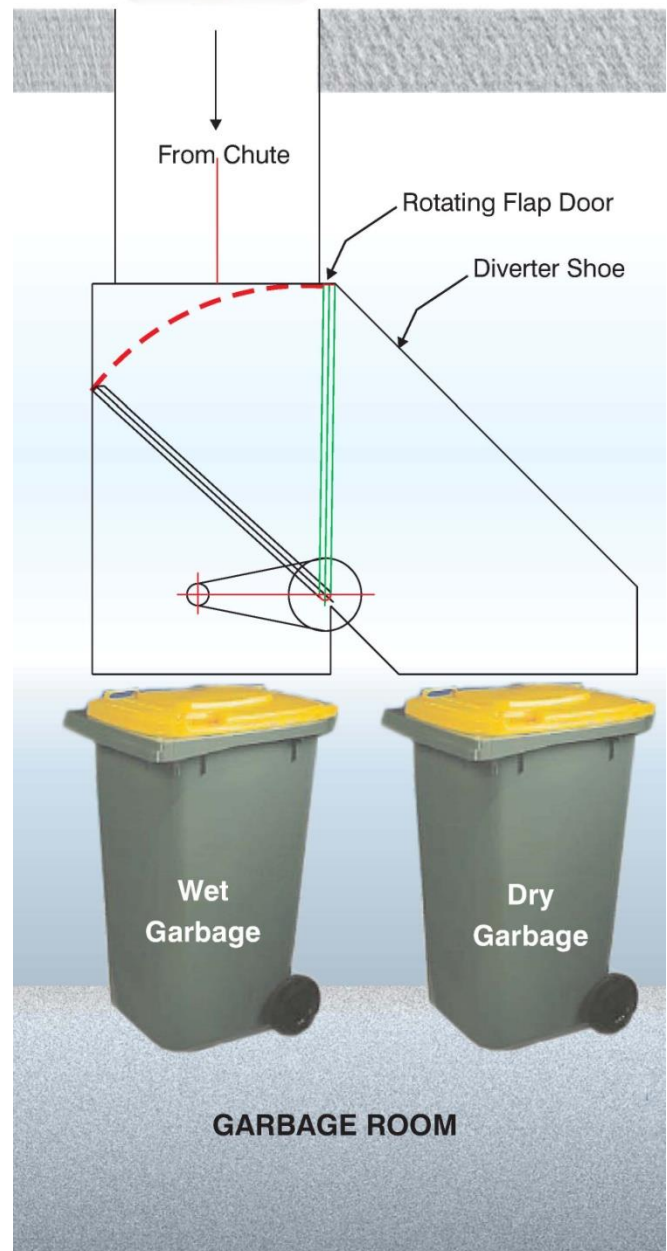
- Municipal norms to segregate garbage in "Dry" (recycling) & "Wet" (Biodegradable) garbage.
- Facilitates segregated garbage collection by using one chute.
- Fully automatic, one user at a time. All hoppers are locked normally.

Operational Sequence

- Press any button "Dry" or "Wet".
- Busy indicator and hoppers remain locked for all other floors.
- Chute converts to respective mode "Dry" or "Wet" by rotating flap door in the garbage room.
- Operated hopper unlocked with indication of selected garbage.
- Open hopper manually & drop respective garbage bag.
- This bag goes to appropriate trolley.
- Auto closing hopper resets the system for next use.
- Total change over time of 10 seconds.

Salient Features

- A step forward to Eco-friendly buildings.
- Cost of multiple chutes is saved.
- Nurturing civic sense of society.
- Single point collection of segregated garbage.
- Ease of operation at lower cost.
- More than 2 garbage types can be collected (Tins, Newspapers, etc.)
- Hopper as well Controller is UL rated for user safety.



Duct Size

Required Minimum Duct Size for Installation

Chute Diameter	Duct / Slab Opening
18" (450 mm)	24" x 24"
24" (600 mm)	30" x 30"
30" (750 mm)	36" x 36"
32" (800 mm)	38" x 38"

1. Front wall shall be constructed after the erection of chute.
2. Provide 6 Amp. MCB, earth, neutral, single phase power point for exhaust control panel near top most intake level.
3. Provide 600x600 mm access door. Location 200 mm above top most intake door.
4. Provide predefined water connection with isolation valve. See chart.

No. of Intake hoppers	Size of water connection
0-7	1" NB
0-15	1.5" NB
0-25	2" NB
0-40	2.5" NB
0-50	3" NB

5. 1/2" Bib cock at roof level for sanitation unit.
6. If water connection is provided from hydro pneumatic system, provide pressure reducing valve.
7. Provide 1" wet riser from fire protection system for total building height inside chute duct.
8. Connect fire sprinklers provided by us at top most intake, lower most intake & in between alternate floors starting from top.

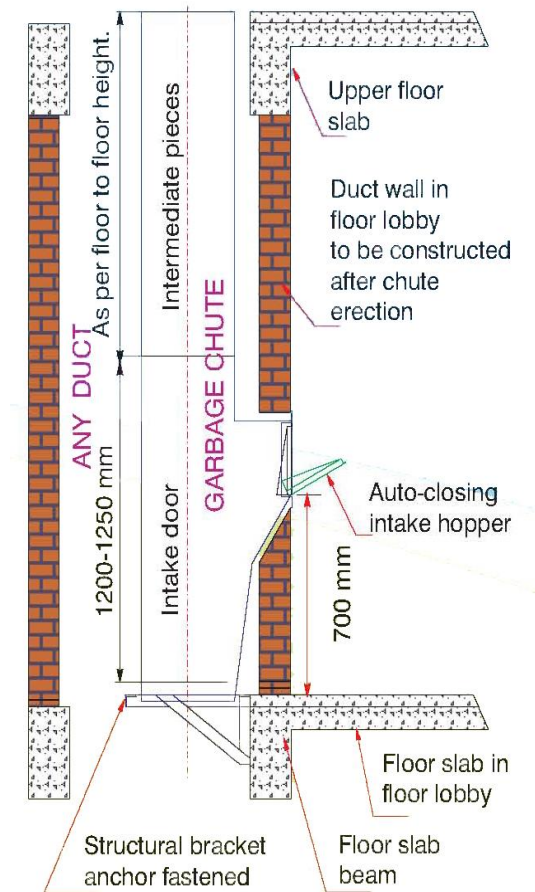
Garbage Room

1. Shall be Air tight non ventilated room.
2. No louvers/ windows in room.
3. Provide wall tiles (min. 1.8 mtr. high)& floor tiles.
4. Floor to have slope towards gully trap connected to drainage/basement sump.
5. Provide 6 Amp. MCB, earth, neutral for cleaning control panel in garbage room.
6. Lighting arrangement.
7. Provide clear min. 1 mtr. wide, outside opening flush door (40mm) to garbage room.
8. Chute duct slab to be closed in garbage room after installation of chute.

Garbage Room Size in Mtr.

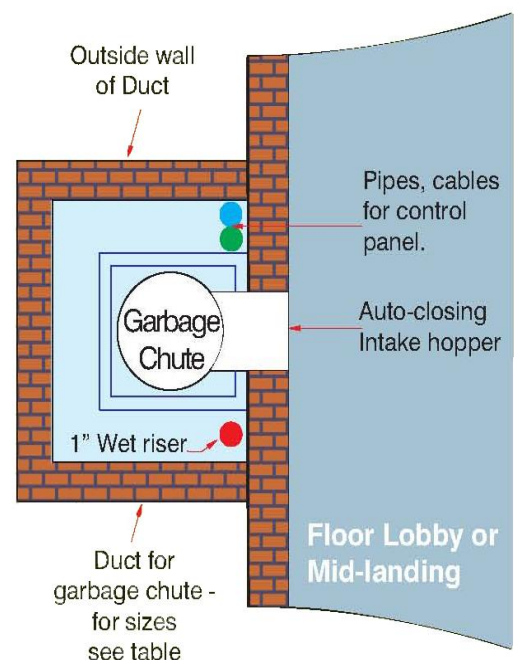
Standard chute	1.5W x 1.5L x 2.4H
Segregated chute	2.0W x 1.5L x 2.4H

Elevation at Garbage Chute Duct

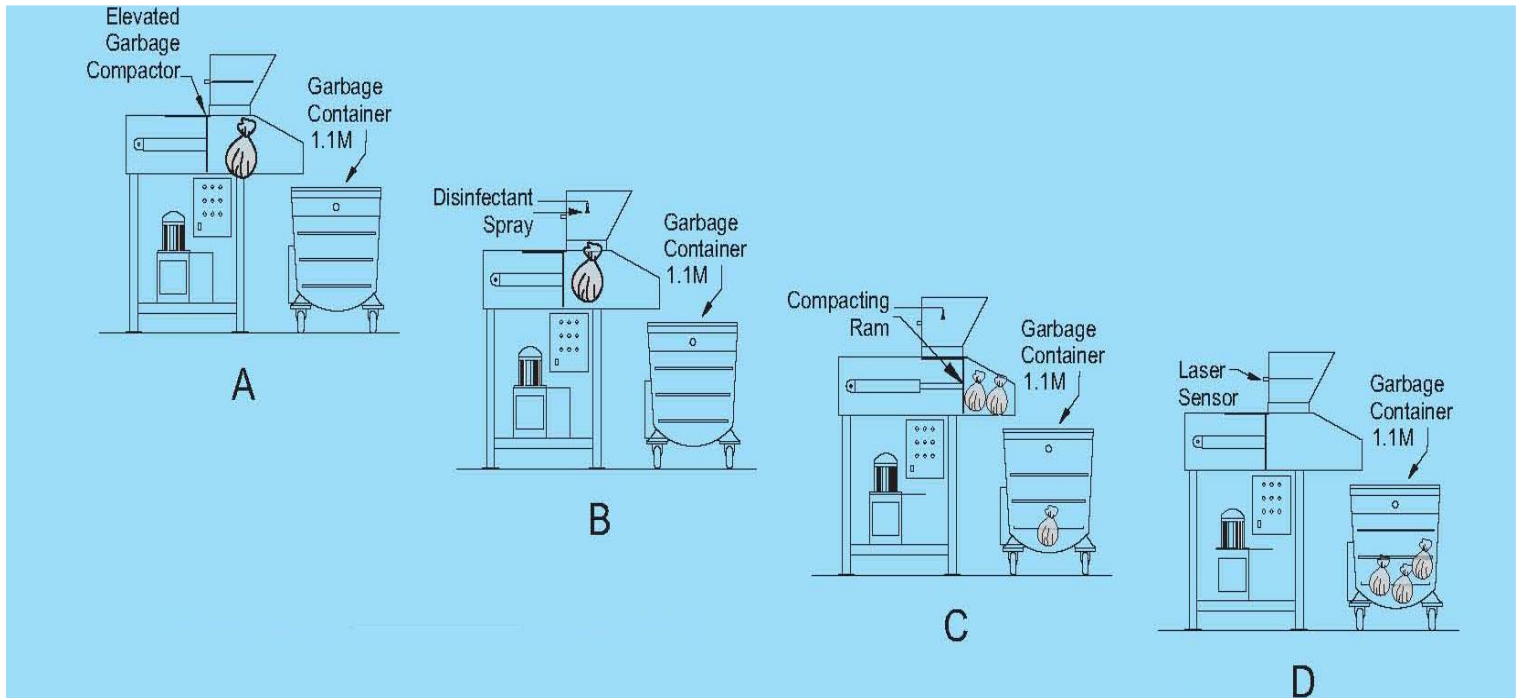


Duct size for garbage chute - refer table

Plan at Garbage Chute Duct



Static Garbage Compactor



- Fully automatic hydraulically operated system.
- Automatic On/Off.
- Laser beam sensors for garbage bag.
- Hydraulic pressure – 30,00 psi.
- Compacts the garbage up to 20% of original volume.
- Compacted garbage automatically dumped into garbage bins.
Capacity - @18000 liters per hour.
Capacity - @750 Kg/hr.
- Compaction chamber capacity. – 200 liters.
(Different sizes available)
- Construction – Fabricated in steel plates.
Compacting Ram – Manufactured in steel plates to work with 40,000 psi. pressure effectively.
- Hardened steel blades are provided to cut objects of larger size. Hydraulic power pack – completely assembled, fully connected, integrally mounted system to develop required standard cycle time – 40 second.
- Motor – 3 phase, 7.5 hp, 1450 rpm, class 'F' insulation, T.E.F.C. motor.
- Pump – pressure balanced, external oval gear type.
- Electrical control cabinet as per IP 55.
- Electrical interlock for floor intake hoppers.
- Automatic disinfectant spray.

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