Schönbach™

GARBAGE CHUTES

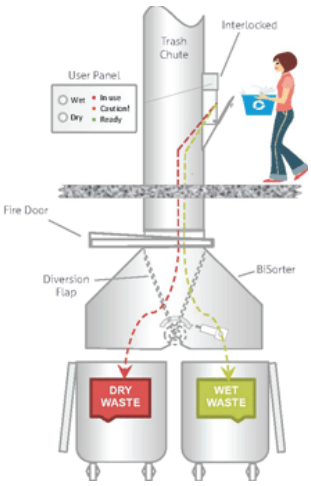
Waste Management Solution

About

Schonbach Group of Italy has worked extensively on designing and producing world class products which would solve the rapidly growing waste management issues, with the growth of high-rise buildings, large apartments serving commercial and residential, and construction buildings have become hallmarks of urban development. This development usually comes with a significantly increased challenge in removing solid waste, refuse or garbage from high-rise buildings with multiple levels.

Schonbach Chutes, a manufacturer, have therefore been developed as effective solutions to the problems of garbage collection and disposal for multiple-leveled high-rise buildings for residential and commercial apartments, with the in-built advantages of convenience, efficiency, safety and hygiene.

Features



- Schonbach Chutes are developed and installed in line with specifications provided in BS 1703:2005, NFPA 82, IS 6924:2001 and NBC 2005.
- Schonbach Chutes are designed with a sanitation system for automated internal cleaning. This automatic cleaning for our garbage trash chutes are implemented from the garbage room through a control panel.
- Schonbach Chutes are designed with an exhaust system to provide a lower limit of 20 air exhausts every hour.
- Schonbach Chutes are designed with intake hoppers that can withstand 90 minutes of fire rated. Schonbach Chutes are also designed with intake hoppers that shut automatically, and discharge-end fire doors for optimal safety.
- Schonbach Chutes allow garbage collection for an entire high-rise building at a single point.
- Schonbach Chutes allow for the separate collection of "Dry" & "Wet" garbage.

Selection of Schonbach Chutes Size

A weighty decision to make when deciding the best trash chute for residential and commercial high-rise buildings is the garbage chute size diameter. The garbage bag size used depends on the amount of garbage generated. As a convention; the size of the intake Hopper is selected based on the garbage bag size employed for garbage collection and disposal in the high-rise buildings. The diameter of the garbage trash chute is therefore selected based on the size of the intake Hopper. Below are lists of the standard Schonbach Chutes size diameter based on the intake Hopper size and the type of high-rise building it would be used in.

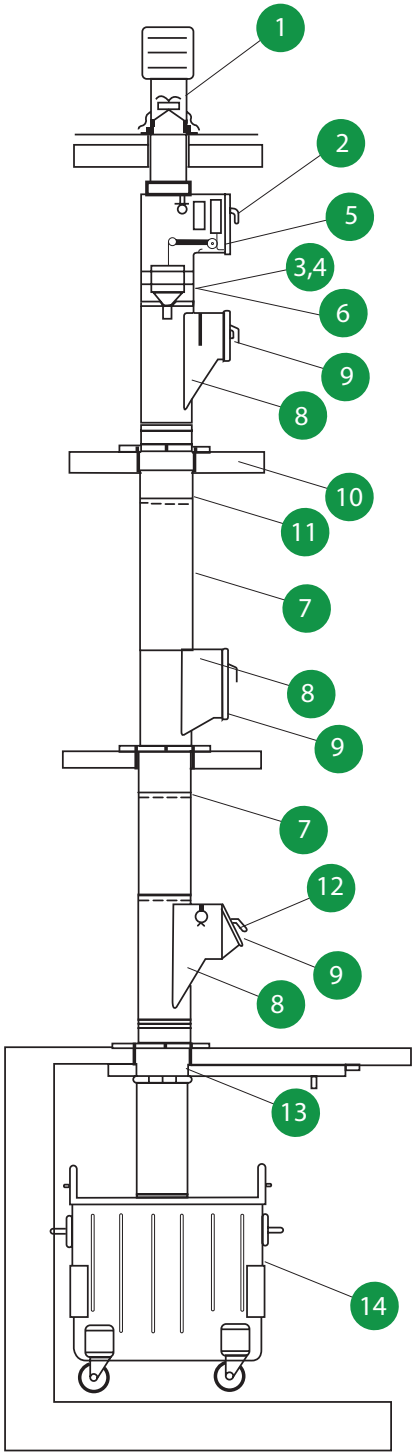
Type of Building	Chute Diameter
Residential	400 / 600 mm
Commercial	600 mm
Hotel & Malls	750 mm
Hospitals	750 mm

Material Design for Schonbach Chutes

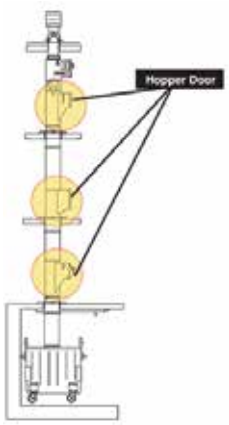
- Stainless Steel in line with the SS 430 / SS 304 codes.
- Garbage Chute Wall Thickness - 1.2, 1.5, 2 mm based on the diameter of the Schonbach Chutes.
- Based on the BS/NFPA codes against fire hazards in high-rise buildings; fiber and plastics are
- excluded from the design of the Schonbach Chutes.
- To prevent failure from corrosion; galvanized steel is excluded from the design of the Schonbach Chutes.

Components of Garbage Chute System

1. Vent Tube with Ventilation Fan & Insect Screen
2. Access Door
3. Solenoid Valve
4. Cleaning System & Brushing Device
5. Disinfecting & Sanitizing Unit
6. Control Panel
7. Chute Tube
8. Intake Throat
9. Hopper Door
10. Clamp Ring & Supporting Frame (Per Floor)
11. Swaged Joint
12. Cleaning & Fire Sprinklers
13. Automatic Fire Cut Off Door wit Fusible Link
14. Garbage Container

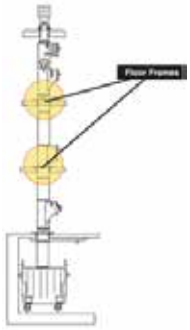


Intake Hoppers



- The intake hoppers for the Schonbach Chutes are opened at the top, and pivoted at their bottoms. The intake hoppers are designed to be fixed with facing the front wall. While the intake hoppers for linen chutes are designed to be manually operated with lateral opening are hung on the sides.
- The Intake hoppers of the Schonbach Chutes have also been found to retain its integrity throughout a 90-minute fire hazard in a residential or commercial high-rise building.; the intake hoppers of the Schonbach Chutes permit a maximum temperature increase of 121 degree Celsius in 30 minutes for the unexposed surfaces of the trash chute.
- The Schonbach Chutes permit interlocking Intake Hoppers to comply with the "One user at a time" principle for high-rise buildings.

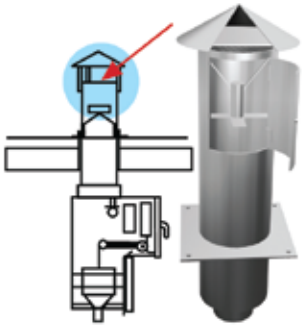
Floor Frames



- The total weight of the Schonbach Chutes is distributed on each floor. Therefore, floor frames are designed in various customized types on every floor of the high-rise residential or commercial building to support the
- Schonbach Chutes.

  Floor frames for the Schonbach Chutes are usually MS galvanized structural frames developed from 40×40×5mm angles, anchored to floor or beams of the high-rise building.

Vent



- Schonbach Chutes are designed with vents that aid in the complete removal of the foul odor from garbage collected from residential and commercial high-rise buildings.
- The vents of the Schonbach Chutes are designed to produce a minimal range of 20-40 air changes or exhausts every hour. The vents of the Schonbach Chutes are installed at the roof level, with its exhaust located at a minimum height of 1.2-2m above the roof of the high- rise building, and are remotely operated through a garbage trash chute control panel.
- The vents designed for the Schonbach Chutes used in high-rise buildings are generally of two (2) types:
  - o Full-diameter vents
  - o Reduced-diameter vents

Sanitation System

- With the aim of providing optimal hygiene; the sanitation system designed with the Schonbach Chutes employs discharge sprinklers with 120 cone profiles attached at the intake portion.
- The sanitation system of the Schonbach Chutes is designed to ensure that the discharge is kept constant, despite fluctuations and variations in the inlet pressure with the floor level height by employing different sprinklers at different floor levels. The sanitation system of the Schonbach Chutes ensures optimal hygiene by with a daily cleaning cycle of approximately two (2) minutes.

- The sanitation system is designed to clean the Schonbach Chutes from inside using water and disinfectant sprayed during the cleaning cycles. These cleaning liquids are supplied with PVC Sch 40 piping fitted along the length of the Schonbach Chutes.
- For convenience; the sanitation system of the Schonbach Chutes is installed at the roof level of the high-rise building, and are operated using a control panel in the garbage room.

Discharge

- The Schonbach Chutes are designed to discharge trash and garbage from high-rise buildings directly to a trolley or compactor.
- The Schonbach Chutes are also designed to reduce diversion of trash and garbage, permitting a maximum diversion of 15 degrees with the vertical, based on the existing codes.
- With the aim of ensuring safety against fire hazards; the Schonbach Chutes are designed with discharge end fire cut-off doors.

Garbage Trolley

- The garbage trolley for the Schonbach Chutes can be designed with the plastic and galvanized steel.
- For optimal efficiency; the garbage trolley requirement is selected based on the garbage disposal requirements of the high-rise building, with the garbage trolley available in the standard capacities of 240, 330, 660, 770, 1100 liters.
- To meet the specific needs of commercial and residential high-rise buildings and large apartments; customized garbage trolleys can be fabricated for your Schonbach Chutes.

Safety

Intake Hoppers

- The intake hopper of the Schonbach Chutes has a minimum fire rating of 90 minutes.
- The insulation design of the intake hoppers for the Schonbach Chutes would ensure that the temperature of the side unexposed to the fire would 121 degrees Celsius, where the temperature of the exposed side is 1000 degree Celsius.
- The intake hopper of the Schonbach Chutes shall be designed to ensure block the passage for flames. The door of its intake hoppers shall also be locked shut at the end of the hose reel test beyond exposure to fire.

Fire Sprinklers

- The fire sprinklers are designed as half-inch IPS (BSP) female threading ready for fitting to the one-inch wet riser of the fire protection system.
- The fire sprinklers of the Schonbach Chutes are designed to extinguish fire by opening at 68 degrees Celsius.

Discharge End Fire Door

In a fire outbreak in the garbage room; the discharge end fire door cuts the fire path at 79 degrees. The two-main grade of discharge doors employed with the Schonbach Chutes are:

Discharge Door 'C' Type

The 'C' type discharge end fire rated doors of the Schonbach Chutes are held on a bearing by a fusible link attached to the top of the slope. In the case of a fire outbreak in the garbage room; this fusible links melt at 79 degrees Celsius and the discharge fire door shuts the upwards path of the garbage trash chute to prevent the spread of the fire. This component is mostly used in garbage chutes.

Discharge Door 'D' Type

The D-type discharge-end fire rated door employed for the Schonbach Chutes is fitted horizontally against gravity by a fusible link. In the event of a fire outbreak; the fusible link melts at 79 degrees Celsius, and the discharge fire door shuts the upwards path of the garbage trash chute to prevent the spread of the fire. This component is mostly used in linen chutes.

Optional

Odour Control Unit

Odour Control Unit is designed for installation in Close Door Garbage / Trash Rooms for controlling or reducing the odour generated in Trash rooms. This odour is a result of decomposition of garbage in the bins at ambient temperatures. Odour can be controlled in diverse ways & in this unit, odorous gases are masked & dissolved by the liquid. To achieve this, the liquid is dispersed in the air in very small particle sizes ranging from 1-10 microns. These particles get attached to the molecules of odorous gases. This increases the weight of these molecules, they settle down & then biodegrade.

Brush Cleaning System

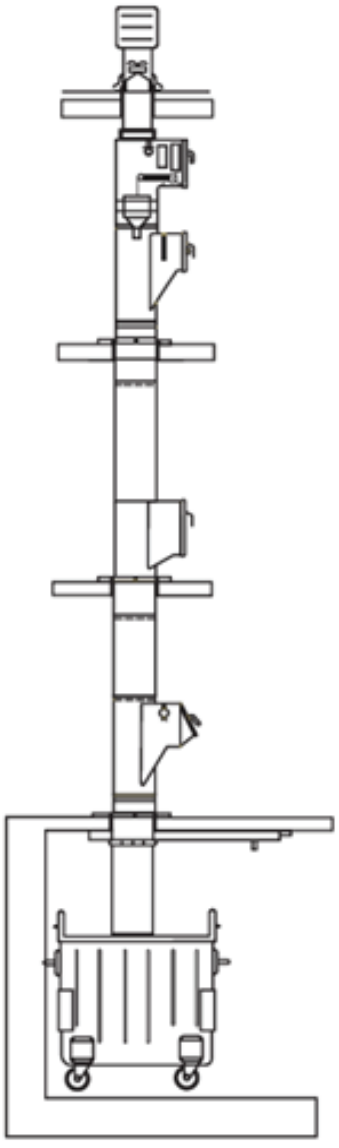
The System is designed to clean the internal cylindrical surface of the garbage chute. This is done periodically to maintain hygiene in the chute. It is installed at the top of the chute & operated by the control panel. Consists of a stiff nylon brush which is automatically lowered and raised in the chute. During this operation water is sprayed by sprinkler. Number of cycles can be set. Available in diverse sizes depending on diameter of the chute.

Sound Damping

Sound Damping is tar like thick paint applied on the outer surface of the chute with Airless gun to deaden the sound of the falling object through the chute. For example any metal object is disposed through chute will bang with the material (metal especially) to make sound . Because of this paint the sound levels, shall be reduced. It is normally 1.2mm to 1.5mm DFT (Dry Film Thickness).

Static Garbage Compactors for High-Rise Building

- The static garbage compactor is operated with a fully automated hydraulic system at a pressure of 30,000 psi, and employs an automatic On/Off switch.
- The static garbage compactor employs laser beam sensors for garbage bags
- The static garbage compactor possesses the capacity to reduce the garbage trash volume by 20% with an input capacity of 18,000 liters per hour, or 750kg per hours. There a various static garbage compactor sizes available however, the standard capacity of the garbage compaction chamber is 200 liters.
- The static garbage compactor is designed for automatic garbage disposal into garbage bins.
- The static garbage compactor is fabricated with steel plates, while the compacting ram of the system is fabricated with steel plates to ensure effective operation at a pressure of 40,000psi. The static garbage compactors are also designed to cut large sized objects with hardened steel blades.
- To operate the static garbage compactor at its standard cycle time of 40 seconds; a hydraulic power pack is installed and mounted. The static garbage compactor is driven by a 3 phase T.E.F.C motor with a rating of 7.5hp, 1450 rpm, and class 'F' insulation.
- An external oval gear pump-type with mechanism for balancing pressure is employed with the static garbage compactor for residential and commercial buildings.
- The electrical control cabinet of the static garbage compactor is designed in compliance with the IP 55 codes, as well as an electrical interlock system for floor intake hoppers.
- The garbage compactor system further operates an automated disinfected spray.



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Gravity Chutes
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