

ARMOUR * SAFETY
Your Safety Solutions Partner

TECHNICAL DATA SHEET

Safety Permanent Chutes Systems



CERTIFICATE OF CONFORMITY.

THIS IS TO CERTIFY THAT THE SAFETY EDGE BARRIER SUPPLIED BY
ARMOUR SAFETY™ HAVE BEEN MANUFACTURED IN COMPLIANCE TO THE
HIGHEST STANDARDS AND QUALITY

ARMOUR SAFETY EDGE BARRIER

STANDARD | RUBBISH CHUTES

GARBAGE CHUTES
LINEN CHUTES

TECHNICAL DATA SHEET

ARMOUR Trash, Linen and Recycling Chutes are designed to provide a clean and efficient method of removing waste and soiled linens from upper floors to a centrally located discharge area on a lower floor. It is a very convenient, simple and low-cost method of controlling and disposing of refuse and linen in multistorey buildings.

Our chutes meet the most stringent requirements of environmental health and safety. The components of chute have interlocking system, cleaning system, sanitizing and disinfecting units, sound dampening and fire control equipment. Within the overall design of chutes have greatly increased their usage throughout the world.

1

Material Specification



2B



Wire Drawing



Sand Blasting



Copper



Brone

We strongly recommend the use of stainless steel 304, 316 for the manufacture of garbage chutes and linen chute. Stainless steel has the advantage of being resistant to the humidity, acid and alkalis contained within refuse. Stainless steel has no applied coating to wear off and most important has very high impact strength. We can also manufacture chutes in Gal. Steel upon your request.

Thickness & Gauges:

ARMOUR SAFETY provides the following material gauges:

- 1.2mm (18 Gauge)
- 1.5mm (16 Gauge)
- 2.0mm (14 Gauge)
- 3.0mm (11 Gauge)

1.5 mm thickness material is recommended for your buildings. And this thickness takes into account both cost and performance

2

Chute Specifications

Normally, there are three sections of chute for each floor; one straight section, one adjustable section and one section with built-in intake throat and door. Unusually high floors might have extra sections or different configurations depending on the specific jobsite conditions.

Chute Size:

Our chutes are available with the following standard internal diameters:

- 18"=450mm
- 20"=500mm
- 24"=600mm
- 28"=700mm
- 30"=750mm
- 32"=800mm
- 36"=900mm

Chutes are available in various diameters; we will also manufacture per customer's drawings and customers special requirements.

However, the NFPA (National Fire Protection Agency) requires a minimum diameter of 24 inches (600mm).

Straight Chute:



Cut to shape from flat metal sheet, mechanical rolled into an accurate cylindrical.

Vertical seams are welded to give smooth, watertight sealed joints. The entire inner surface area is smooth and free from any projections that will impede the free flow of refuse within the total vertical length of the chute. And beadings will be shaped to strengthen it and improve the sealing.

Intake Chute:

This could be described as the most critical component of a refuse chute.

If it is not designed and manufactured correctly, there is a probability the garbage chute will not work satisfactorily.

Flat metal sheet is accurately cut and shaped by highly skilled craftsmen, vertical seams being welded, horizontal are mechanically jointed or welded. And beadings will be shaped to strengthen it and improve the seaking



Offset Chute:

We fabricated the offsets at a heavier gauge to withstand the impact of falling bags. Usually made of #12- gauge SS steel (2.6-3.0mm). With two support hanger clips on top and two at the bottom for connection to hanger supports available as an accessory. This offset has discharge mounting clips. Offsets is made per normal dimensions (1.2meter) but may be ordered at longer lengths and configurations using our custom option.

Usually should be 15°, 30°, 45° per customer request and building structure. Offsets are fabricated to full diameters of refuse and linen chutes provided by us.



Intake Door:



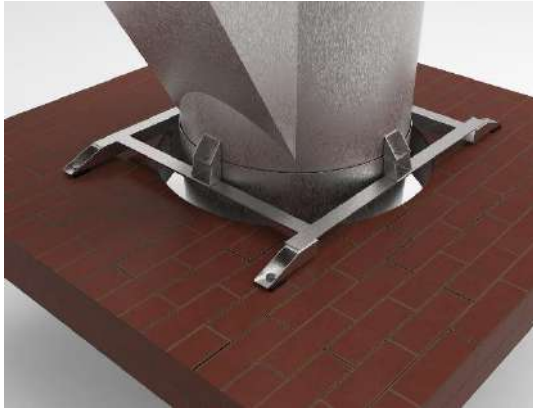
- Bottom Hinged or Left Hinged or Right Hinged.
- Hand-operated, self-closing, positive latching.
- UL Label with a clear listing of 1-1/2 hour, 30 minute – 250 degree max temperature rise.
- Handle can be T-handle, L-handle (ADA compliant), Pulling handle, Thumb Trigger style.
- Latch can be Tubular Latch or Square Latch.
- For Door panel surface, Wire Drawing, Mirror and Bronze can be chose
- The whole door panel and the frame are made with 16 gauge type 304 stainless steel. All the parts can be completely disassembled while mounted in the wall allowing every part to be cleaned, serviced or replaced with ease. Stainless Steel Frame is available blank or embossed with "Rubbish", "Soiled Linen", or "Recycle".
- Other accessories available include steel baffle or rubber baffle, electrical interlocks, key locks and more. Can be retrofitted to others chutes with sheet metal adaptors and wall modifications to fit chute door openings for doors of the same size. Complies with building codes, NFPA-82 and ASTM standards.

Intake Door Size:

Chute hopper doors are available in different sizes but commonly used ones are:

Intake Door Size		
Chute Dia.	Trash Chute	Linen Chute
	Bottom Hinged Doors Width*Height	Side Hinged Doors Width*Height
18"(450mm)	12"*15"(305mm*381mm)	15"*15"(381mm*381mm)
20"(500mm)	12"*15"(305mm*381mm)	18"*18"(457mm*457mm)
24"(600MM)	15"*18"(381mm*457mm)	21"*21"(533mm*533mm)
28"(700mm)	18"*18"(457mm*457mm)	21"*21"(533mm*533mm)
30"(750mm)	21"*18"(533mm*457mm)	24"*24"(610mm*610mm)
36"(900mm)	24"*24"(610mm*610mm)	24"*24"(610mm*610mm)
Available Door sizes		
400mm*500mm	12"*15"(305mm*381mm)	12"*12"(305mm*305mm)
400mm*600mm	15"*18"(381mm*457mm)	15"*15"(381mm*381mm)
450mm*450mm	18"*18"(457mm*457mm)	18"*18"(457mm*457mm)
500mm*500mm	21"*18"(533mm*457mm)	21"*21"(533mm*533mm)
600mm*600mm	24"*24"(610mm*610mm)	24"*24"(610mm*610mm)

Support Frame:



The frame is hot dip galvanized for internal use and external use. Cut, shaped and drilled from 40mmx40mmx5mm mild steel angle with a rigid, welded construction. And Isolator Pad should be attached.

Vent & Fan:

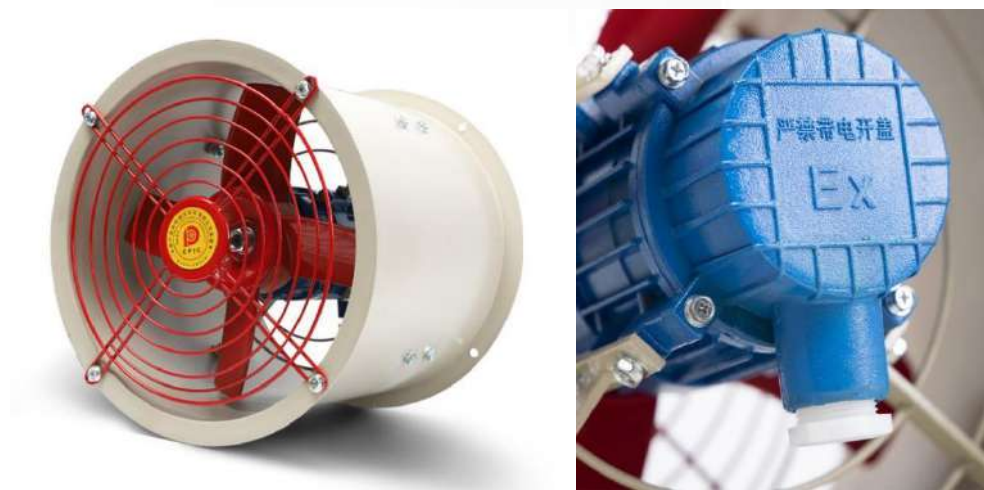


The purpose of a vent is to dissipate odors, as well as to dissipate hot gases in the event of a fire within the chute.

NFPA codes require a full diameter vent, penetrating and extending 3' above the roof. Our full diameter vent comes complete with roof flashing, riser and metal safety cap and is of 16 gauge SS to better resist the external elements.

Include Weather Cap, Bird & Inset Screen, Counter Flashing and Exhaust Fan and more.

Axial Exhaust Fan:



THE MAIN TECHNICAL PARAMETER

Model No.	Rotation r/min	Volume (m ³ /h)	Power (kw)	Leaf Angle (°)	Pressure (Pa)	Noise dB(A)
2.8	2900	3202	0.25	30	232	75
	1450	1605	0.18	30	60	62
3.15	2900	4545	0.37	30	373	79
	1450	2273	0.25	30	74	65
3.55	2900	6542	0.75	30	373	82
	1450	3265	0.37	30	93	68
4	2900	9336	1.1	30	474	85
	1450	4687	0.55	30	119	70
4.5	1450	6658	0.55	30	150	73
5	1450	9133	0.75	30	185	76
5.6	1450	12812	1.1	30	232	79
6.3	1450	18250	1.5	30	294	82
	1450	26120	3	30	373	84
7.1	960	17296	1.5	30	164	78
	1450	37370	4	30	474	86
8	960	24739	2.2	30	208	79
9	960	35227	3	30	263	82
10	960	48326	4	30	321	83
11.2	960	67892	7.5	30	407	88

Discharge Door:

There are two types of discharge outlets:

Rolling Incline Type Discharge:



The discharge door is held open by a 165°F fusible link (UL listed). The door will roll shut if the link is melted when the ambient temperature of a fire reaches 165 °F.

Fusible link, chain, wheels, and door panel are replaceable. The door panel is made of 3.0mm SS steel with a 1.5mm frame. This discharge door is available for square or round chutes in the standard sizes of 18" to 36". Door has an all-welded door and frame with a collar to fit an 18"to 36" round chute. Monthly inspections of the discharge should be made to ensure that the link is intact and that no waste has collected in the horizontal tracks of the discharge, which might interfere with its closing path.

Discharge door is not designed to be used to shut off the chute.

Rolling Incline Type Discharge:



The hopper type discharge is typically used on linen chutes. The discharge is top hinged and held open by chains with a 165°F fusible link (UL listed). The hopper type discharge can also extend into the discharge room from the ceiling and is supported on a pedestal(s). The hopper discharge should be kept clean and free of damage caused from service impact and shall remain open at all times. It is not intended to be used as a 'shut off' door when carts are changed, etc.

Main Master Control Panel:



With necessary switches and indicators: D&S Unit, Cleaning System, Brushing System(Optional per request), Fan, Maintenance, Emergencies. Fire alarm integration with BMS; Warning Alarm Light; LCD; Floor Monitoring System to show the status of each floor; Integrated with compactor and sorter(Optional per request) Operations details as below:

1. If one door opened, the other doors will show red light.
2. Remind the tenants by the different frequency of the beep
3. It controls D&S Unit, Cleaning System, Fan, Maintenance, Emergency, Brushing System(Optional per request).
4. The interlock system will be activated under the following case: Fire alarm, replacing bin or bin full(Optional per request), D&S, Cleaning, Brushing(Optional per request), Maintenance, Emergency on compactor and sorter, etc.
5. If any floor door open or not close properly, it indicates digitally floor Numbers on the LCD screen(Optional per request).
6. Show the status of each floor(Optional per request).
7. Show the status of compactor and sorter by integrating with both machine(Optional per request).

Sprinkler Head:



One automatic sprinkler head (required by NFPA code) is furnished as standard equipment at the top of all chutes. On trash chutes in particular, additional sprinkler heads should be furnished at intermediate and lower levels.

A sprinkler at the top intake, at alternate floor levels and the bottom intake for linen, trash and recycling chutes, are required. These heads are normally installed in the top corner of the intake throat to protect them from falling material and are hidden behind a shield to prevent water from spraying out of the intake door and to prevent material that is charged into the throat from contacting the head.

These automatic sprinkler heads fuse at 165° F to open up and flood the chute. When the fire is out, these sprinklers must be replaced. The automatic sprinkler heads furnished with the chute should be piped in accordance with NFPA standards.

Flushing Head:



Most chutes are flushed periodically to keep them clean. A flushing spray head is furnished at the top of each throat as standard equipment. When supplied with water (hook-up by others), the head radiates a flow of water to the inner chute wall. The water will tend to channel when first started, but will spread out as cleaning occurs. How often and how long the chute should be flushed depends upon many variables such as chute usage, size, condition, water temperature and pressure.

D & S Unit:



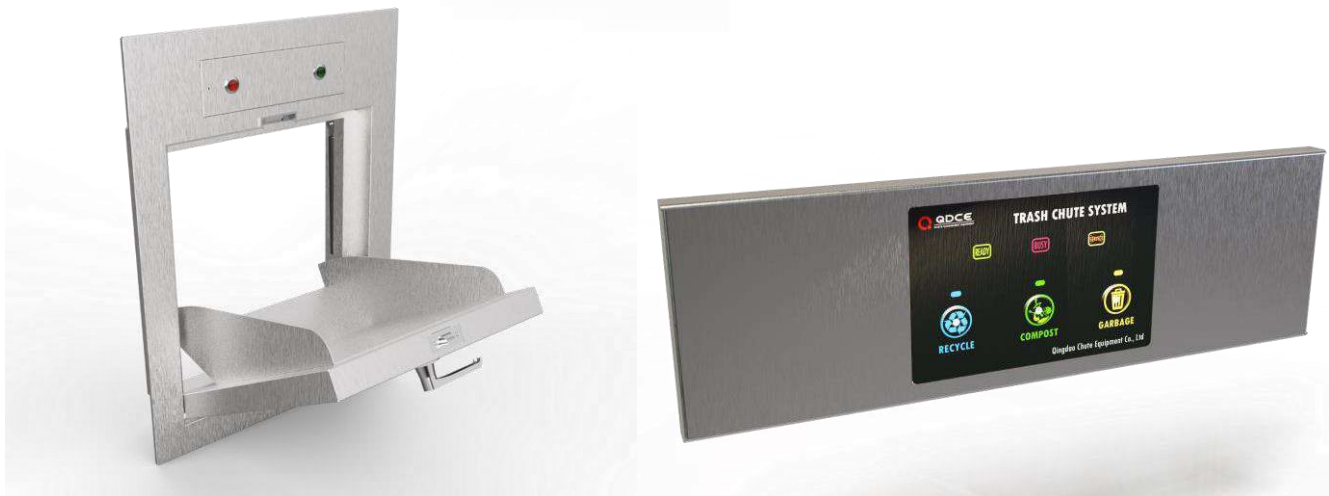
A disinfecting and sanitizing unit is sometimes requested for trash, linen and/or recycling chutes to control odor and bacteria (hook-up by others). The unit is comprised of a 3.8L reservoir tank and proportioning valve which is located above the top intake of a chute. It injects a disinfecting solution into the water flow from the flushing spray head system.

Access Door:



The Access Door is located above the top intake of the chute, allows access to the valves that operate the flushing spray head and/or sanitizing unit. The access door is 450mm*450mm, or 600mm*600mm side hinged, constructed of stainless steel, and is classified for a UL 1½ hour fire rating and a maximum temperature rise of 250° F 30-minute label.

Interlocking & Sorter System:



Electric Interlock doors are designed to lock out all other intake doors on a chute when one door is opened. When chute is in use, all other chute doors will remain locked with a light showing another door is in use. Maintenance personnel, by means of a key switch at the power supply control box, have the ability to lock out the intake doors when servicing the equipment. This will close all doors when the discharge container is out of position or while maintenance is being performed in the discharge area.

Electrical Interlock system comes standard with service switch which will disable the interlock feature.

The interlock system is pre-wired and is designed to be plugged into a 120V or 220V receptacle and stepped down to 24VDC located in the power supply box.