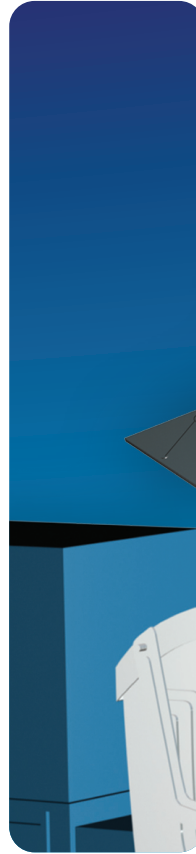
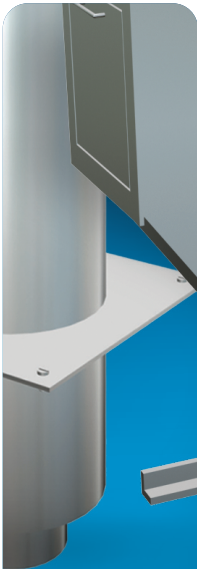




WASTE MANAGEMENT SYSTEM GARBAGE & LINEN CHUTES



www.unitech-ikk.com
www.sfsp-ikk.com
www.ikkgroup.com



UNITECH
For Building and Construction Materials

WASTE MANAGEMENT SYSTEM (GARBAGE & LINEN CHUTES)

PRODUCED BY



**SPECIALIZED FACTORY FOR STEEL PRODUCTS
SIGMA FACTORY FOR STEEL PRODUCTS**



Waste Management Sys. (Garbage & Linen Chutes)

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**ABOUT
UNITECH**

Unitech Introduction

Unitech is a Saudi based Multinational Company providing building and construction solutions that is empowering the region's construction industry for the past 40+ years. We have been successfully providing solutions through mastering our main business activities: Design, Manufacture and Trade.

**Design:**

Provide Design & Engineering Solution to the construction sector, complying with international & local standards.

**Manufacture:**

Operating with Global Standards, we are widely recognized for our advanced light steel solutions and Hot-Dip Galvanization Facility.

**Trade:**

We are one of the region's largest Importer/Exporter of Building & Construction Materials.

Unitech is an **ISO QMS 9001:2015** certified company and is a member of the US Green Building Council. Our experienced teams and operations are present across the Middle-East North Africa regions (MENA) and Pakistan, giving us an extensive regional network that benefits our clients and partners. We are also present in Europe via our design and engineering office in Stuttgart.

For more information, please visit: www.unitech-ikk.com

Mission & Vision

Mission

UNITECH is committed to transforming the construction and building sector by equipping engineers with advanced solutions and expert support at every project stage. As a leading industry provider, we empower our team to deliver exceptional service that consistently exceeds expectations. By fostering a cohesive and forward-focused culture, we attract and retain top talent, driving our mission forward. Our innovative, customer-centric products set new industry benchmarks and pave the way for future progress.

Vision

To be the Customer's First Choice...

Our Strategy

Unitech's strategy continues to focus on accelerating its business throughout the region, to service the construction sector via superior products & solutions, backed up by a group of highly experienced people in the field. Unitech also aims to enhance its geographical presence in its areas of interest and where opportunities exist.

We combine a deep understanding of building and construction materials markets with a successful history of upgrading our products and developing our processes.

We have the qualified employees, the know-how and the products to service major construction projects, medium sized to mega projects taking in care our positive contribution to our societies.

We thrive towards excellence by acknowledging:



Customer Satisfaction



Partner and Supplier Relations



Employee Retention



Positive Influence on Society and Environment

Our Employees

We are a company that prides itself on its 'family' culture and we seek out high-caliber people. We are a company that has, at its core, a team philosophy that is clearly apparent each and every day - there is a real sense of being there for one another.

We believe in nurturing the skills of our team members and providing growing levels of responsibility. Our people bring unique skills, energy, expertise, experience and perspectives to our workforce.

Unitech's family of employees consists of experienced, well-motivated and dedicated team of engineers, technicians, sales executives and management staff. This team is committed to serve our customers, with the best solutions available in the market.

Our Journey

40+ Years of Excellence

Since 1979, having been set to become an independent company under the framework developed by Sheikh Isam Kabbani, Unitech started its journey of success with confidence and enthusiasm, hard work and care to detail and a commitment to become the best within its industry.

Its dedicated people could only imagine what the future could bring to this newly established entity. Unitech's journey of success has been marked with outstanding achievements and superior accomplishments. Year by year, Unitech has been acknowledged as the "First Choice for Building & Construction Material" by major construction consultants in the region, governmental authorities, well-known contracting and project development corporations.

We have obtained invaluable knowledge about the construction industry in general, providing specialized solutions to construction projects throughout MENA region. From a couple of outlets in Saudi Arabia, Unitech today is present all over the Kingdom and in several countries throughout the region providing its products and solution to various locations worldwide.



Est. 1979

THE BEGINNING

Unitech was established in the Western Region of KSA as a Sales Company selling basic construction material.

During the same year, another branch was established in the heart of the kingdoms capital, Riyadh.



1980 to 1989

AGE OF GREAT RISK

Unitech Dammam was open for business in the oil-rich eastern coast of Saudi Arabia.

Within these 10 years the idea of in-house manufacturing facility was born and Specialized Factory for Steel Products (SFSP) was established in Riyadh.



1990 to 1999

AGE OF GROWTH

Branches of Unitech were established in Makkah, Madina, Khamis Mushayt and Jubail.

The need to increase its range of products and the necessity to have production lines for mass production lead to the decision to move the SFSP Factory from Riyadh to Jeddah.

Pioneering Construction Since 1979

We are constantly evolving in order to become more flexible in our operations, more sustainable in our societies, and more innovative in conducting our business.

By delivering superior products tailored to the specific construction needs, ambitious solutions, and an outstanding customer service, we serve today's needs through developing tomorrow's markets.

Helping construction projects experience success is what fueled its days. Unitech is keen to continue offering superior products, a wide spectrum of solutions, governed by our top-notch management style.

Such aspirations require trust in our responsibilities. Our Responsibilities for the future and with this in mind we continue to target excellence with committed efforts.



2000 to 2015

AGE OF CONSTRUCTION BOOM

Qassim, Hofuf and Yanbu Branches were inaugurated in KSA and branches outside KSA were established in UAE, Egypt, Lebanon, Oman, Jordan and Germany in order to facilitate the construction boom in the Middle East.

During this period SFSP state of the art facilities were launched in DIC UAE and Unitech thrived, marking some of the best years in business.



2016 to 2019

AGE OF GREAT CHANGE

This period, marked the age of great change in order to align with the economic shift in the GCC and the world in general.

Company wide right sizing initiatives were taken especially in KSA to align with the kingdom's ambitious vision 2030 and during this period the upgraded SFSP state of the art facilities were launched in JIC 3 KSA.



2020 & Beyond

NEW FRONTIER

This period marks the expansion of Unitech into the South and Central Asian territories. We aim to cater these markets and play an active role in these countries development.

During 2020, Unitech Pakistan was officially inaugurated and marked the entrance of Unitech into Asian Market.

Our Manufacturing Arm

SFSP

SFSP is a leading manufacturer and fabricator of light steel construction products in the region, servicing the construction sector through its state of the art facilities which are spread all over the MENA region. Products of SFSP are manufactured from quality raw material according to the relevant international standards to meet all kinds of construction projects requirements, such as MEP, façade, blockwork & waste management systems.

Commitment to Quality

Our commitment to quality is clearly revealed in the way we do our business; our processes, our close interaction with our clients as well as the strict product inspection procedures. To achieve this, we have implemented quality systems & processes that are continually being improved to satisfy our customer's needs.

Product Development

Product development process is substantial to the success of our business. We leverage all resources to provide up-to-date reliable products, environmentally friendly, durable to withstand the toughest weather conditions. Our engineers are constantly testing the products, seeking to present a combination of performance and quality across all our product ranges.

For more information, please visit:
www.sfsp-ikk.com

Value Chain

Our value chain starts up with the quality of the raw materials and ends up in client satisfaction. Our business practices backed up by all technologically essential business elements are supported by an efficient logistics, warehousing and delivery system that maintains a valuable supply chain for products.

The value chain is integrated in our business module, giving us strength and preserving our good reputation gained through the past 4 decades.

Engineering Specialty

Our products development engineers integrate their vast knowledge to provide the perfect solution to projects within the required specifications and time-frame.

The products development department maintains highly skilled calibers with a dedication towards efficient and reliable solutions even in the most complicated cases where delicacy and skillful approaches are indispensable.

Design and Product Safety

Our design and engineering office in Stuttgart ensures our products comply with relevant European and international standards of fabrication, taking into attention the safety factors which govern the public safety of projects.

Sustainability and Responsibility

We are constantly working hard to reduce our environmental footprints while maintaining the high quality and safety standards. We have set our targets to become three times more efficient in the next 10 years. Our responsibility towards our stakeholders is valued through our positive contributions towards our colleagues, our business partners and our communities as well.

Our Design Office



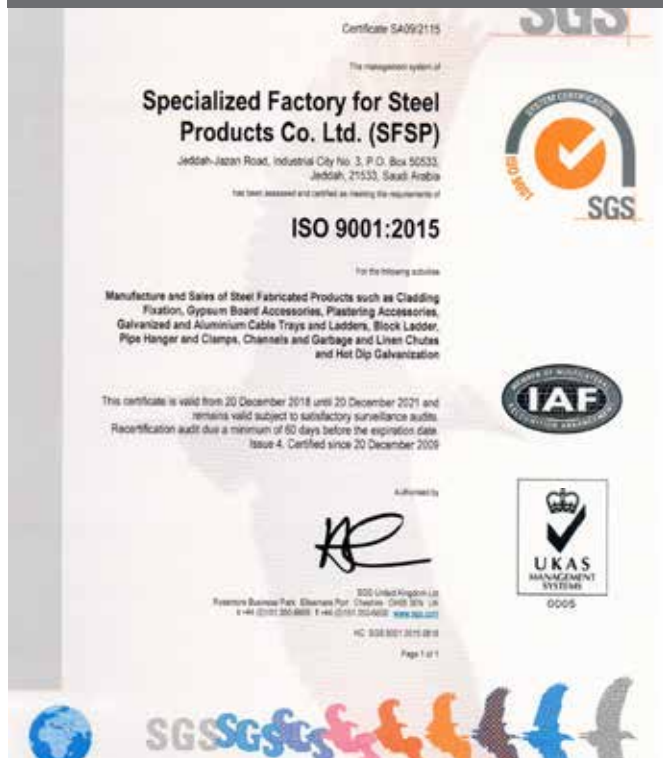
UNITECH DEUTSCHLAND is a "Design & Engineering" Office. Unitech Germany support Unitech & SFSP operations through well-informed cadre of engineers. They help our customers from conception to the completion by delivering design, engineering and project management services.

Thanks to our multidisciplinary team in Unitech Germany and their expertise, we assist you in your ambition to develop your innovation, your engineering and your organization. Our goal is to serve our clients through these elements:

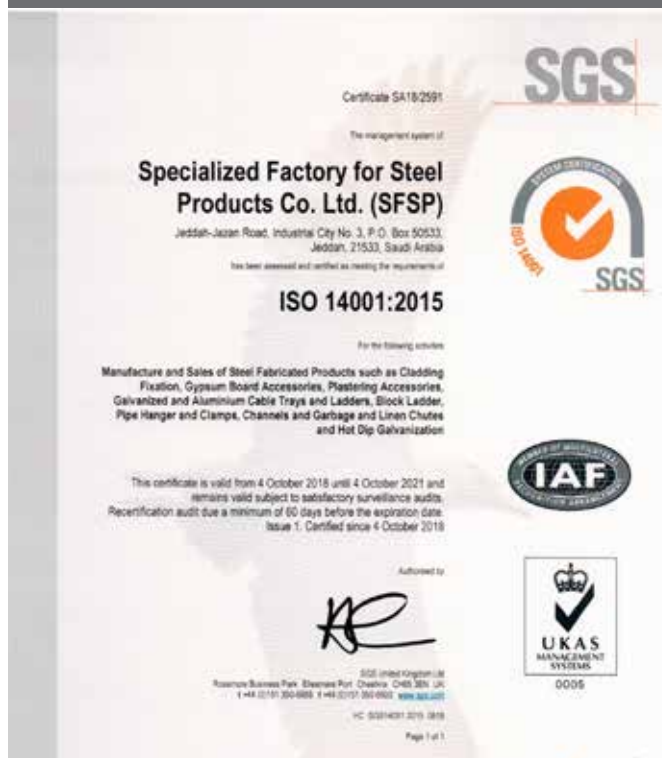
- Excellent in engineering ideas and solutions
- High quality in performance
- Firmness on meeting deadlines

SFSP Certifications

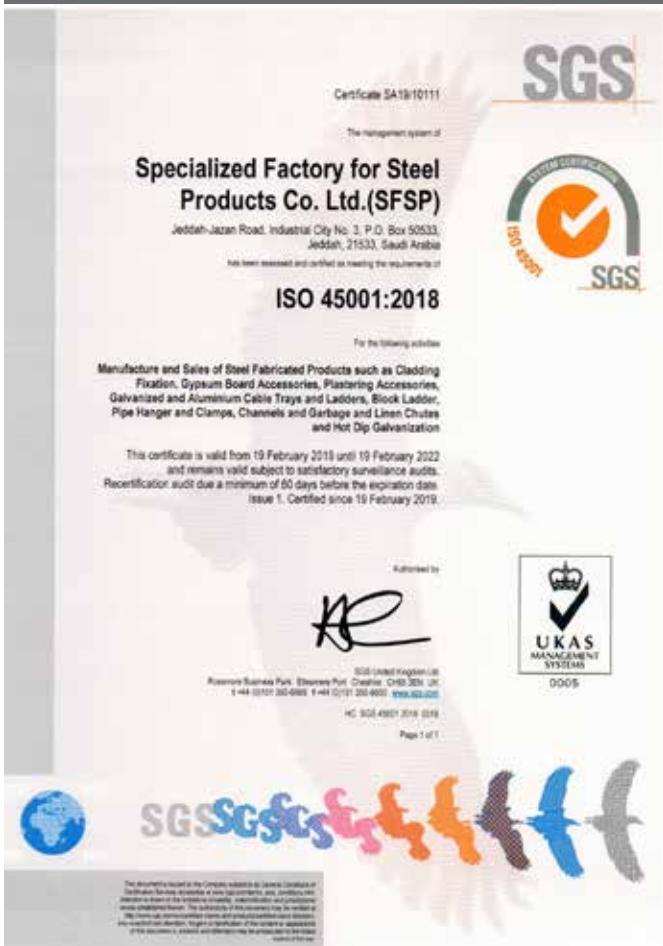
ISO 9001 : 2015 (Quality Management Systems)



14001 : 2015 (Environmental Management System)



ISO 45001 : 2018 (Occupational Health & Safety)



STD 096 (Q-Mark Certificate)



ISO 9001 : 2015
(Quality Management System)



Certificate of Registration

This is to certify that the Management System of:

Sigma Factory for Steel Products

P.O. Box 37991, Saih Suhaib - 3, 4 Round About, Dubai Industrial City, Dubai,
United Arab Emirates.

has been approved by Alcumus ISOQAR and is compliant with the requirements of:

ISO 9001:2015



Certificate Number: 22244-Q15-001
Initial Registration Date: 23 February 2015
Previous Expiry Date: 22 February 2024
Recertification Date: 14 November 2023
Re-issue Date: 30 November 2023
Current Expiry Date: 22 February 2027

Scope of Registration:

Trading and Manufacturing of all kinds of Steel Related Construction Materials.

Signed:
Alyn Franklin, Chief Executive Officer
(on behalf of Alcumus ISOQAR)

ISO 14001 : 2015
(Environmental Management System)



Certificate of Registration

This is to certify that the Management System of:

Sigma Factory for Steel Products

P.O. Box 37991, Saih Suhaib - 3, 4 Round About, Dubai Industrial City
Dubai, United Arab Emirates.

has been approved by Alcumus ISOQAR and is compliant with the requirements of:

ISO 14001:2015



Certificate Number: 22244-EMS-001
Initial Registration Date: 22 September 2015
Previous Expiry Date: 21 September 2024
Recertification Date: 04 June 2024
Re-issue Date: 04 July 2024
Current Expiry Date: 21 September 2027

Scope of Registration:

Trading and Manufacturing of all kinds of Steel Related Construction Materials.

Signed:
Alyn Franklin, Chief Executive Officer
(on behalf of Alcumus ISOQAR)

This certificate will remain current subject to the company maintaining its system to the required standard.
This will be monitored regularly by Alcumus ISOQAR. Further clarification regarding the scope of this certificate
and the applicability of the relevant standards' requirement may be obtained by consulting Alcumus ISOQAR.

OHSAS 45001 : 2018
(Health & Safety Management System)



Certificate of Registration

This is to certify that the Management System of:

Sigma Factory for Steel Products

P.O. Box 37991, Saih Suhaib - 3, 4 Round About, Dubai Industrial City
Dubai, United Arab Emirates.

has been approved by Alcumus ISOQAR and is compliant with the requirements of:

ISO 45001:2018



Certificate Number: 22244-OHS-001
Initial Registration Date: 22 September 2015
Previous Expiry Date: 21 September 2024
Recertification Date: 10 June 2024
Re-issue Date: 20 June 2024
Current Expiry Date: 21 September 2027

Scope of Registration:

Trading and Manufacturing of all kinds of Steel Related Construction Materials.

Signed:
Alyn Franklin, Chief Executive Officer
(on behalf of Alcumus ISOQAR)

This certificate will remain current subject to the company maintaining its system to the required standard.
This will be monitored regularly by Alcumus ISOQAR. Further clarification regarding the scope of this certificate
and the applicability of the relevant standards' requirement may be obtained by consulting Alcumus ISOQAR.

Registered in United Arab Emirates as BM TRADA VENTURES LLC (TRADING AS BMTV)
Unit 904, Business Avenue Building, PO Box 30945, Dubai, UAE

**BS EN 61537:2007 (KEMA - KEUR Certified For Cable
Management Products)**

CERTIFICATE

Issued to:
Applicant:
Isam Kabbani Trading Est. (Unitech)
Rashidiya
Dubai, United Arab Emirates

Manufacturer/Licensee:
Sigma Factory for Steel Products (SFSP)
Saih Suhaib 3, 4RA, Dubai Industrial City,
Dubai, United Arab Emirates

Product : Cable management system
Trade name : SFSP
Types : IE-CT-X-10, IE-CT-X-12, IE-CT-X-15, IE-CT-X-20

The product and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:
- a type test according to the standard IEC 61537:2006 and EN 61537:2007
- an inspection of the production location according to CENELEC Operational Document CIG 021
- a certification agreement with the number 2156954

DEKRA hereby grants the right to use the KEMA-KEUR certification mark.

The KEMA-KEUR certification mark may be applied to the product as specified in this certificate for the duration of the KEMA-KEUR certification agreement and under the conditions of the KEMA-KEUR certification agreement.

This certificate is issued on: 20 January, 2014 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 2156954.01

DEKRA Certification B.V.

drs. G.J. Zoetbrood
Managing Director

H.R.M. Barends
Certification Manager

© Integral publication of this certificate is allowed

ACCREDITED BY THE
DUTCH ACCREDITATION
COUNCIL



DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem The Netherlands
T +31 88 96 83000 F +31 88 96 83100 www.dekra-certification.com Registered Arnhem 09085396

UL Certification* (Cable Trays)

CERTIFICATE OF COMPLIANCE

Certificate Number 20160816-E483358
Report Reference E483358-20160816
Issue Date 2016-AUGUST-16

Issued to: Sigma Factory for Steel Products
Saii Shuaib 3, 4 R/A Dubai Industrial City
Opposite DEWA Substation
Dubai UNITED ARAB EMIRATES

This is to certify that representative samples of CABLE TRAYS
Steel Channel Cable Tray, Ventilated, Heavy Duty (HCT),
Very Heavy Duty (VCT) cable trays.

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/NFPA 70, "National Electrical Code" (NEC)
Additional Information: See the ULC Online Certification Directory at www.ulc.ca
for additional information

Only those products bearing the ULC Listing Mark should be considered as being covered by ULC's
Listing and Follow-Up Service.

The ULC Listing Mark generally includes the following elements: the symbol ULC in a circle, with
the word "LISTED", a control number (may be alphanumeric) assigned by ULC, and the product
category name (product identifier) as indicated in the appropriate ULC Directory.

To confirm the status, validate the above information via the online directory.

Look for the ULC Listing Mark on the product.

John Henry
John Henry, General Manager, Director of Sales - Canada
UNDERWRITERS LABORATORIES OF CANADA INC.
Any information and documentation involving ULC Mark services are provided on
behalf of ULC. For questions, please contact ULC's Customer Service Dept.

Page 1 of 1

UL Certification* (Chute Type Fire Doors)

CERTIFICATE OF COMPLIANCE

Certificate Number 20170811-R38825
Report Reference R38825-20170811
Issue Date 2017-AUGUST-11

Issued to: Sigma Factory for Steel Products
Saii Shuaib 3, 4 R/A Dubai Industrial City
Opposite DEWA Substation
Dubai UNITED ARAB EMIRATES

This is to certify that representative samples of CHUTE-TYPE FIRE DOORS
Chute-type fire door and frame assembly of the insulated
type, rated up to and including 2 hr, 450°F Temperature
Rise Rating.

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/UL 10B, Fire Tests of Door Assemblies
Additional Information: See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's
Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

UL Certification* (Fire Barrier)

CERTIFICATE OF COMPLIANCE

Certificate Number R40146
Report Reference R40146-20220524
Date 2022-May-25

Issued to: Sigma Factory for Steel Products
Saii Shuaib 3, 4 R/A Dubai Industrial City
Opposite DEWA Substation
Dubai AE

This is to certify that representative samples of MECHANICAL JOINT ASSEMBLIES
The products covered by this Section are mechanical joint
assemblies designated Nexus Fire Barrier (NFB) for use in
various joint systems described in the Fire Resistance
Directory.

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 2079, Tests for Fire Resistance of Building Joint
Systems

Additional Information: See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information

This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up
Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's
Follow-Up Services.

Look for the UL Certification Mark on the product.

Bruce Mahlenholz
Bruce Mahlenholz, Director North American Certification Program
UL LLC
Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please
contact a local UL Customer Service Representative at ul.com/customer-service



SFSP Products

SFSP produces a variety of products ranging from cable management systems; cable trays, cable ladders, basket trays, trunkings and support systems, to mechanical cladding fixations, steel lintels and block work accessories, plasterers' beads, expanded metal and block work reinforcement, strut channel systems, pipe clamps & hangers, gypsum profiles as well as garbage and linen chutes. With the introduction of new machines and the enhancement of production methods, SFSP continues to develop its production methods systematically as well as thoroughly. Its design office in Stuttgart, Germany provides a comprehensive design and calculation case studies, enabling the factory to have the safety factors required for the usage of its products.



MEP Solutions

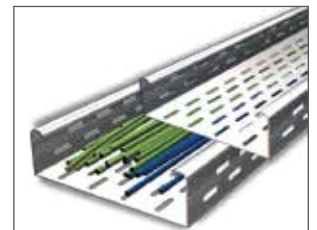
Cable Management Systems

Cable Management Systems are economical and designed to meet most requirements of cable and electrical wire installations and comply to international standards of fabrication and finishing.



Cable Trays & Accessories

Cable Trays are designed to meet most requirements of cable and electrical wire installations and comply to local and international standards of fabrications and finishes.



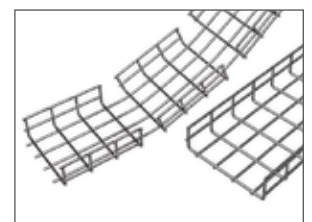
Cable Ladders (Welded & Swaged)

Cable Ladders of different side heights are available upon request.



Basket Trays & Accessories

SFSP's Basket Tray systems make connections fast and simple with limited need for tools. Its design allows for continuous airflow, and prevents heating up of cables. SFSP's Basket Tray comes in a full range of sizes and is made with high-strength welded steel wires.



Cable Trunkings

Cable Trunkings and Accessories are offered in a comprehensive range. Mill galvanized, hot-dip galvanized, and powder coated are the various finishes produced in our factories.



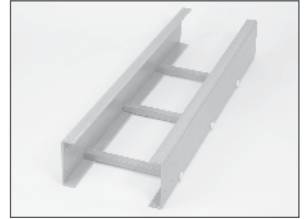
Underfloor Trunking

Underfloor Trunking Systems solutions incorporate a range of products for the distribution of power and data services, it is a coordinated set of containments that protect, segregate, contain, and route cables within a given environment.



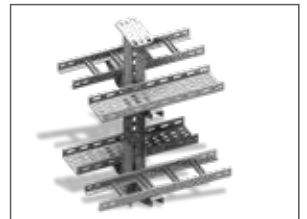
Fiberglass Reinforced Plastic (FRP) Cable Tray / Ladder

SFSP Fiberglass Reinforced Plastic (FRP) Cable Management Systems are designed, manufactured, and tested to be installed in most harsh environmental conditions of onshore and offshore facilities for several industries including Oil and Gas, Petrochemicals, Manufacturing, Mining and others.



Cable Management Support Systems

Cable Support Systems are well designed to provide necessary support for cable trays, cable ladders and trunkings. Cable supports are manufactured according to common standards from high quality raw materials.



C-Channel Strut Systems

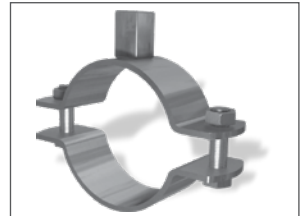
SFSP's Metal Framing Systems provide an economical solution for electrical, mechanical and industrial supports with a wide variety of applications in the construction industry.

Applications: - Pipe and Conduit Supports - Tunnel Pipe Stanchions - Racks and Shelvings - Wall Framings.



Pipe Clamps & Hangers

Pipe Clamps and Hangers from SFSP used in the support of pipes and equipments are manufactured according to the highest standards of fabrication. A diversified choice of Pipe Hangers, Pipe Clamps, EMT Straps, Omega Clamps, Beam Clamps, J and U-Bolts and Threaded Accessories.



Galvanized Threaded Rods and Accessories

Threaded rod, often referred to as a stud, is a rod of varying length that is threaded in a helical structure. Similar in appearance to a screw, the threading extends around and along the rod to cause rotational movements when in use.



Access Panels by FEROX

Ferox Access Panels provides complete solutions of several types of access panels including Hook Type, Pivot Type, Tiled Type as well as fire rated access panels and hygienic access panels. A variety of finishes are available including stainless steel of different grades, galvanized steel with powder coating.

Ferox Access Panels are manufactured from high quality material and assembled with stainless steel hardware.



Roof hatches by FEROX

Roof hatch provides safe and convenient access to commercial building roof areas using interior ladders and stairs for maintenance work. It can be installed on flat roofs with a maximum slope of 30°. Made of steel frames, doors and stainless steel hardware. Powder coated to provide corrosion resistance and outstanding exterior durability.





Architectural & Finishing Solutions

Mechanical Cladding Fixation (Stangle)

Stangle Cladding Fixation includes design, calculation and production of several types of mechanical fixings and accessories used for cladding purposes. Stainless and galvanized steel are among the various materials used in the fabrication.



Aluminium System for Stone Cladding

SFSP aluminum systems are designed and calculated to provide a practical & safe solutions of stone cladding. Wide range of aluminum profiles with different shapes to support different types of stone cladding.



Waste Management Sys. (Garbage & Linen Chutes)

Chutes from SFSP are very convenient, simple and low cost method of controlling and disposing of refuse and linen. Chutes meet the most stringent requirements of environmental health and safety.



Dry Wall & Ceiling Profiles

Gypsum Boards are considered among the most economic and ideal way for wall partitioning. Easy to install, saves time and money, gypsum boards can be used as a backing for wall treatments such as wall paper, fabric, tile and wood paneling or it can simply be painted.



Metal Ceiling Grid Systems

SFSP Ceiling Grid System is a practical, convenient ceiling system. It has a complete range of main c-channel sections and complementary parts so that you can adapt the modules to suit your design needs and load requirements.



Expansion Joint System by Nexus

Our variety of expansion joints includes profiles for walls and floors, profiles for seismic movements, watertight profiles. Our products suit pedestrian as well as heavy load traffic areas.



Entrance Matting System by Nexus

Nexus Entrance matting systems provides heavy duty entrance mats, composed of aluminium profiles with carpet, brushes or rubber inserts. For any design of any shape, being round, square, oval, or any other symmetrical or asymmetrical shape, Nexus offers a variety of entrance matting profiles



Profiles by Nexus

Nexus offer comprehensive solutions for the construction industry ranging from Expansion Joint Covers and Fire Barriers to Entrance Matting Systems, Wall and Floor Profiles, Tactile Solutions, etc... NEXUS range of products is manufactured according to most common international standards to meet the requirements of commercial, residential, governmental, transportation, healthcare and educational projects.



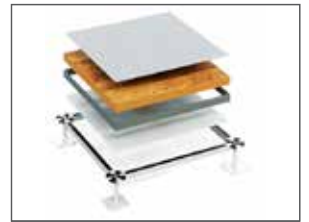
Phenolic Compartment by CUBIX

CUBIX phenolic compartment and partition systems are manufactured and customized to meet the precise needs of simple to complicated projects with its top-notch finish, quality of material and within a timely delivery. A complete solution with a wide selection of colors and textures are available.



Raised Access Flooring by PIXEL

PIXEL Raised Access Flooring offers comprehensive solutions of High Tech Raised Access Flooring Systems for the construction industry. PIXEL Raised Access Flooring are manufactured according to most common international standards to meet the requirements of commercial, residential, governmental, transportation, healthcare, and educational projects.



Metal Doors by FEROX

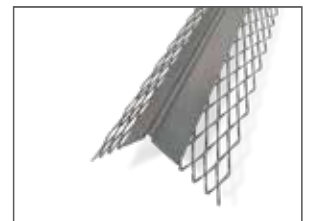
Ferox offers a wide variety of steel doors, manufactured according to international standards of fabrication and as per the legal requirement of commercial projects whether industrial environments, local authority buildings, leisure, hospitality, healthcare, transportation, education or retail offices, and shopping centers. Our range of steel doors includes fire rated steel doors, Insulated Doors, Acoustic Doors, Louvered Doors, Sliding Doors, Security Detonation Doors, Burglar Resistant Doors, Entry Gates and several other types to meet the requirements of all projects.



Civil Solutions

Expanded Metals, Plasterers' Beads

Expanded Metals help the formation of joints, protection of corners and resistance against cracks, chips and impact damage. SFSP manufactures in accordance with BS EN 13658 – 2, ASTM C847-18, BS EN 845-3:2003+A1:2008, ASTM A 951/A 951M - 2016 standards.



Block Ladder Reinforcement

SFSP ladder and truss types are used for the reinforcement of brick and block masonry to give improved tensile strength to walls subjected to lateral loading e.g. wind and seismic. SFSP Block reinforcements reduces the risk of cracking either at stress concentration around opening.



Steel Lintels & Block Work Accessories

Steel Lintels provide a combination of strength and light weight, resulting in efficient load bearing performance and increased productivity on site. They are characterized by their ease of installation in addition to time as well as money saving. SFSP manufactures Steel Lintel in accordance with BS EN 845-2:2013+A1:2016 and according to relevant standards BS 5977 Part 2:1983.



SFSP Products are solely distributed by UNITECH for Building and Construction Materials

All Products Manufactured by Sfsp are Solely Distributed by SFSP Sister Companies in the Following Countries

KSA

Isam Kabbani & Partners for Building and Construction
Materials Co., Ltd.

شركة عصام قباني وشركاه لمواد الأنشاء والتعمير المحدودة

BAHRAIN

Isam Kabbani Trading Est.

مؤسسة عصام قباني التجارية

UAE

Issam Kabbani Trading Company LL

شركة عصام قباني للتجارة

EGYPT

Unitech Egypt for Building Materials

شركة بونستك مصر لمواد البناء

OMAN

Isam Kabbani & Partners Trading Co.

شركة عصام قباني وشركاه للتجارة

QATAR

Unitech Qatar for Building & Construction Materials Ltd., W.L.L

شركة هونتك قطر لمواد الانشاء والتعمير المحدودة

KUWAIT

Hassan Kabbani for General Contracting Est.

مؤسسة حسان قباني للمقاولات العامة للمباني

LEBANON

Unitech ME s.a.r.l.

شركة بونتك مدل است ش.م.م

PAKISTAN

Unitech IKK Pakistan (PVT.) LTD.

شركة بونتك مدلل است ش.م.م

SFSP CUSTOMER SERVICE CALL CENTER

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GENERAL INFORMATION

GARBAGE & LINEN CHUTES

Chutes from SFSP are very convenient, simple and low cost method of controlling and disposing of refuse and linen. Chutes meet the most stringent requirements of environmental health and safety. Chutes are used as original equipment in new buildings, such as: Hotels, Hospitals, High Rises and Residential Towers.

Choices of Materials

SFSP provides refuse and linen chutes from the following high quality materials:

- Stainless Steel: SFSP strongly recommends the use of stainless steel for the manufacture of refuse chutes. Stainless is highly resistant to the humidity, acid and alkalis contained within refuse.
- Galvanized Steel: Galvanized steel does not have the same protective characteristics of stainless steel, yet, it is used extensively for refuse chutes.

Material Thickness & Gauges

SFSP provides the following material gauges:

- 1.5mm (16 Gauge)
- 2.0mm (14 Gauge)
- 3.0mm (11 Gauge) (when specified).

Indoor Chutes

The majority of refuse chutes are fitted internally within a building. SFSP chutes can either pass through the floor slab of the building or be fixed within a vertical shaft.

Outdoor Chutes

SFSP refuse chutes can be fixed externally to most types of building, particularly useful when a refuse chute has to be provided after the building has been finished or where it is not possible to replace in the same location. External refuse chutes can be single or double skinned.



MATERIALS

STAINLESS STEEL

Austenitic Stainless Steels

SS 304 & SS 316

As per:

ASTM A 240/ DIN 17400 /EN 10088-2

ASTM A480 / ASTM A666 / ISO 3506 / EN 10028-7 /JIS G 4304

F1 Stainless Steel Fasteners EN 3506

F2 Stainless Steel Wire BS 1554, ASTM A276

ALUZINK STEEL

AluZink Steel DX 51D + AZ

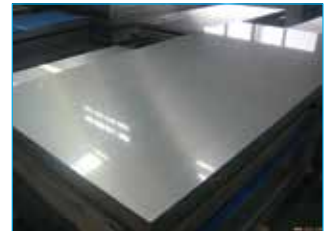
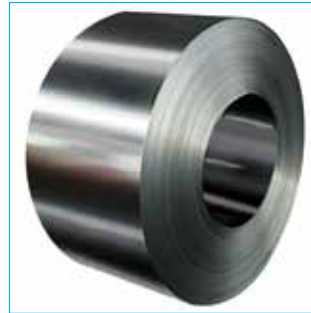
As per:

EN 10215 / EN 10143/ DIN 55928 /ASTM A 792

ALUMINIZED STEEL

Aluminized Steel CR4: ASTM A463:2

Aluminized STC (H2): BS 1470



DESIGN OF CHUTES

Choices of Materials

SFSP provides refuse and linen chutes from the following high quality materials:

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Stainless steel is highly resistant to the humidity, acid and alkalis contained within refuse.

Galvanized Steel: Galvanized steel does not have the same protective characteristics of stainless steel, yet, it is used extensively for refuse chutes.

Material	1.5 mm	2.0 mm	3.0 mm	Standard
Stainless Steel Type 304	*	*	*	EN 10088-2
Stainless Steel Type 316	*	*	*	EN 10088-2
Galvanized Steel	*	*	*	EN 10346 / DX51D+Z
Aluminized Steel	*	*	*	ASTM A463 / BS 6830
Aluzink	*	*	*	EN 10215 / EN 10143 DIN 55928 /ASTM A 792

Material Thicknesses & Gauges

SFSP provides the following material gauges:

- 1.5mm (16 Gauge)
- 2.0mm (14 Gauge)
- 3.0mm (11 Gauge) (when specified).

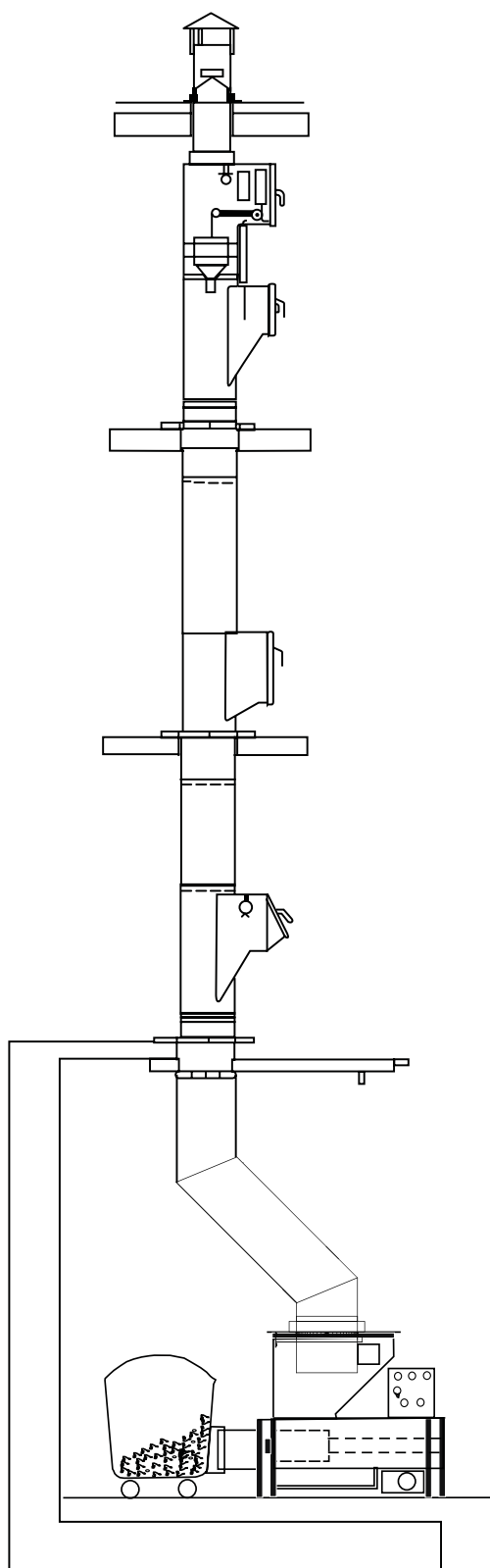
Usage of 1.5 mm thick material is recommended for buildings up to 10 storey's high, for other heights refer to the following table:

Number of Storeys	Storey	Material Thickness
1 – 10	All	1.5mm
1 – 20	1 – 9 10 – 20	2.0mm 1.5mm
1 – 30	1 – 6 7 – 20 21 – 30	3.0mm 2.0mm 1.5mm
1 – 45	1 – 9 11 – 30 31 – 45	3.0mm 2.0mm 1.5mm

Useful Weights

Material	Kg/m ²
Carboard stacked flat or baled, folded newspaper	500
Food Waste, well compacted	600
Vegetable waste, uncompacted	200
Empty Bottles	300
Mixed general refuse, similar to domestic	150
General office waste and paper	50
Waste paper loose in sacks	20

TECHNICAL INFORMATION



Original Equipment

SFSP refuse chutes are specially designed for use in flats, hotels, hospitals, apartments, factories, condominiums, offices, commercial complexes and shopping centers.

Indoor Chutes

The majority of refuse chutes are fitted internally within a building. SFSP chutes can either pass through the floor slab of the building or be fixed within a vertical shaft.

Outdoor Chutes

SFSP refuse chutes can be fixed externally to most types of building, particularly useful when a refuse chute has to be provided after the building has been finished or where it is not possible to replace in the same location. External refuse chutes can be single or double skinned. Please contact our technical department for further advice.

Choosing the Correct Size of Chute

SFSP provides a comprehensive range of refuse chutes, both in size and material choice.

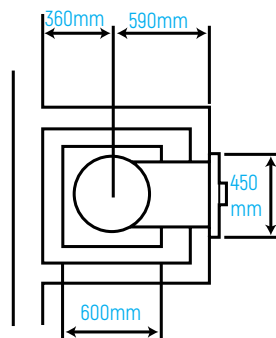
The choice of materials to be used are covered thoroughly elsewhere, the choice of refuse chute diameter is shown on this page.

However we strongly recommend the use of 600 mm diameter chutes, as in practical terms this diameter is the least likely to cause any long term problems.

Appreciating that design and space considerations sometimes lead to compromises, this table opposite is given as a guide to assist you in choosing the correct diameter of chute.

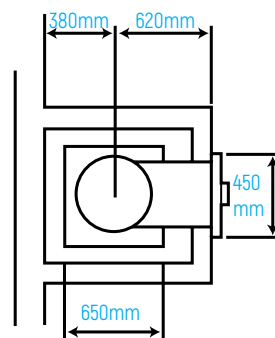
Recommened Chute Diameter	Plastic Sack Capacity	No. of Apartments per Chute
500 mm	20 liters	21 - 30
550 mm	30 liters	31 - 40
600 mm	40 - 50 liters	40 +
700 mm	40 - 50 liters	40 +
800 mm	45 - 55 liters	45 +
900 mm	50 - 60 liters	50 +

VARIATION



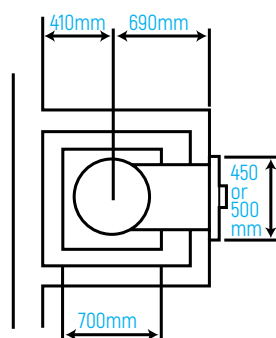
600 mm hole through floor slab for 500 mm chute

500 mm diameter



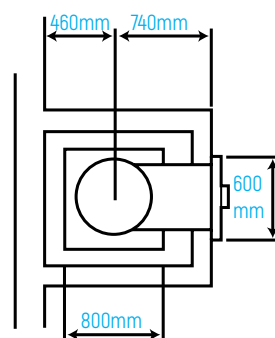
650 mm hole through floor slab for 550 mm chute

550 mm diameter



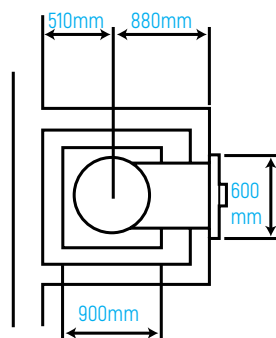
700 mm hole through floor slab for 600 mm chute

600 mm diameter



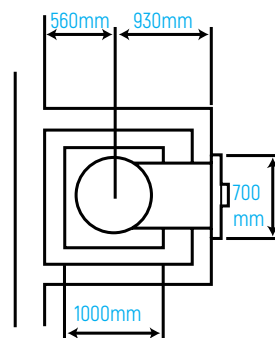
800 mm hole through floor slab for 700 mm chute

700 mm diameter



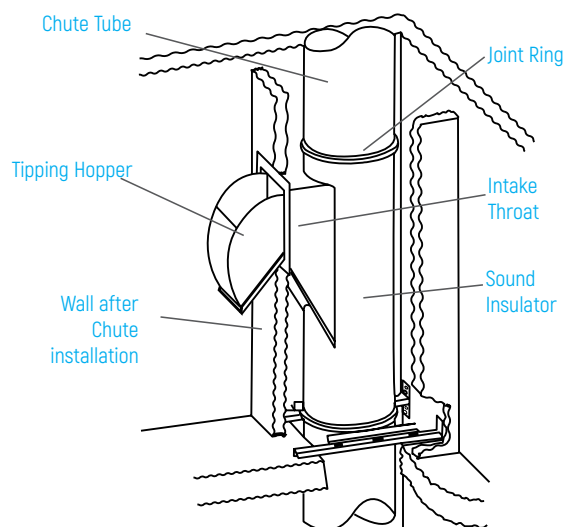
900 mm hole through floor slab for 800 mm chute

800 mm diameter



1000 mm hole through floor slab for 900 mm chute

900 mm diameter



Refuse Chute Sizes

SFSP chutes are available with the following standard internal diameters:

500mm (20"), 550mm (22"), 600mm (24")

700mm (28"), 800mm (32"), 900mm (36")

N.B: We will also manufacture to customers special requirements.

Height

Varies according to individual building design.

SFSP provides chutes within the range of 1- 45 storeys, or from as small as 1 meter up to a maximum of 165-170 meters. Over this height two chutes should be provided, the first terminating at a mid building level refuse collecting room, the second chute to start at mid-building level and terminating at ground floor or basement level.

Shape

To give an unimpeded free flow of refuse within a chute, the best shape has proved to be circular, SFSP refuse chutes therefore have a circular cross section. We will make square section chutes to customers special requirements.

Refuse Chute Trunking

Cut to shape from flat metal sheet, mechanical rolled into an accurate cylindrical form. Vertical seams are according to material type and gauge either lock seamed or welded, to give smooth, watertight sealed joints.

The entire inner surface area of the trunking is smooth and free from any projections that will impede the free flow of refuse within the total vertical length of the chute.

Entry Section

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 refuse chute will not work satisfactorily.

The entry sections of SFSP chutes are designed and manufactured within the constraints of BS 1703:1977 / BS 5906:1980 to ensure complete satisfaction.

Flat metal sheet is accurately cut and shaped by highly skilled craftsmen, vertical seams being welded or lock seamed, horizontal are mechanically jointed or welded.

SFSP refuse chute entry sections have our specially designed Inner baffle, to prevent air or falling refuse already present in the chute from accidentally blowing back when any refuse hopper is opened.

ACCESSORIES

Vents & Fans

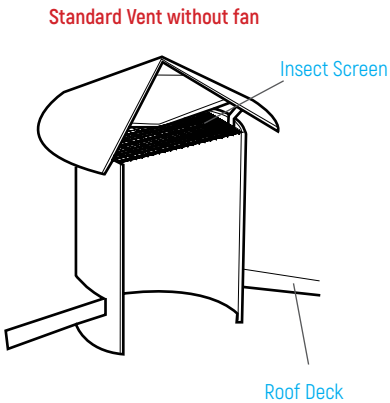
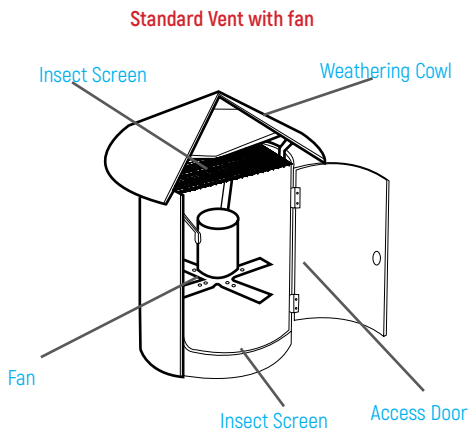
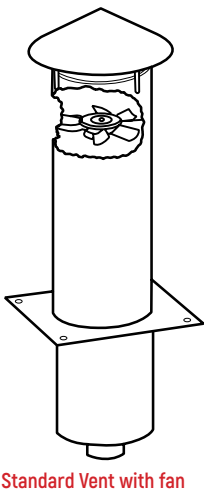
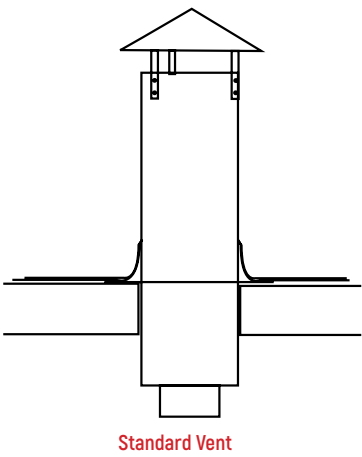
Automatic Foul Air Exhaust Fan installed at the top of the chutes, usually above roof level this ventilator maintains a smooth flow of fresh air within the refuse chute. Normally changing the air approximately 50 times per hour. The foul air exhaust fan helps prevent the escape of any bad odors or explosive gases released by aerosols etc, through refuse hoppers or into the refuse room. For use with vent pipes of (9") 230 mm diameter or above.

Technical Specification

Air displacement 200m3/hour. Fan motor, Class H tropicalized continuously rated, 1300 RPM. Electric Supply 220/240 volts or 110/120 volts, 50/60 Hz. N.B. Flashed to roof by others.

Full Diameter with Insect Screen:

Recommended on chutes if a foul air exhaust fan is not being specified. The fan diameter is usually 300 to 400 mm . The screen keeps out any insects or birds attracted to the vent pipe. An exhaust fan can be fitted to any full diameter vent pipe, complete with inspection door. It extends 4 feet (1.2m) above roof.



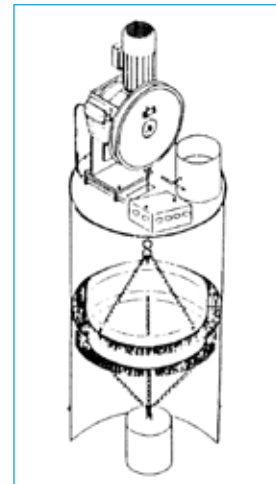
Description	Vent Tube, 1.5 mm thick
Quantity	One Unit per Chute
Location	1.22 meter above roof slab
Description	Fan
Quantity	One Unit per Chute
Location	Top of vent tube

CLEANING EQUIPMENT

Automatic Chute Cleaning System

Specifically designed to clean the total vertical length of the internal surface of all chutes. The system is factory fabricated as an integral unit ready for immediate on site connection.

A cylindrical housing with replaceable stiff nylon brushes is automatically lowered and raised by a geared electric motor. The nylon brushes scrape and clean the internal surface as they move down and up the chute. The water supply for flushing the chute, the electric motor and the built in safety overloads, are all individually controlled by a robust electric logic control circuit.



Automatic Brushing Device

Electrical Specification

Supply 380/415 volts, 50/60hz, 3 phase.

Motor 1/6 HP 1600 R.P.M. continuous.

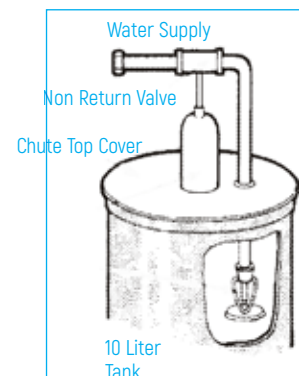
Disinfecting and Sanitizing Unit

Designed to give manual or automatic flushing of the internal surface of SFSP chutes. Fitted above the topmost entry section of the refuse chutes as part of an automatic or manual cleaning system or on its own. Simple to operate and maintain, a disinfectant or sanitizing unit is recommended for use with every chute installation, particularly as it overcomes one of the problems associated with the use of chutes-strong odors. The specification given above can be changed by using a smaller volume stainless steel tank within an automatic chute cleaning system.

Flushing Spray Head



15 mm Flush Head Spray

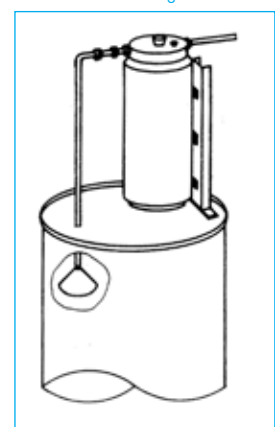


Manual Cleaning System

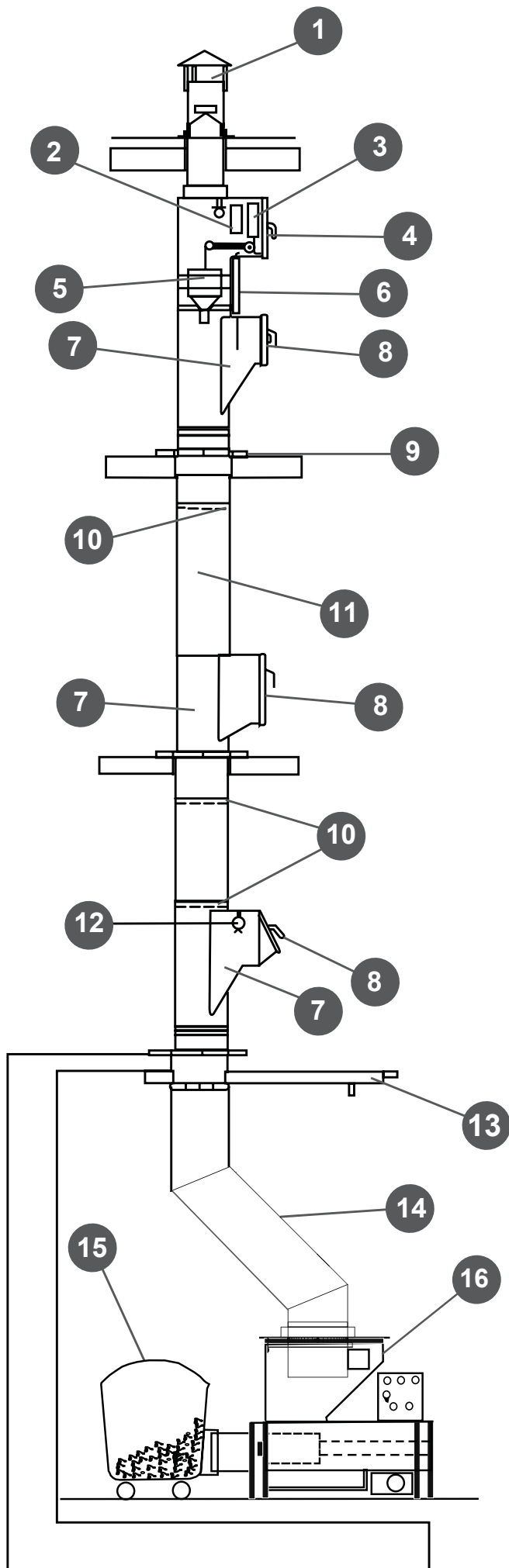
Designed, like the automatic cleaning system, to clean the total vertical length of the internal surfaces of SFSP chutes. This manually operated system is factory fabricated as an integral unit, ready for immediate on-site connection. A cylindrical housing, with replaceable stiff nylon brushes, is manually lowered and raised on a high geared winch which has a ratchet to give operator safety. The water supply to the flushing head spray is manually controlled by a conveniently placed gate valve. Manual cleaning is recommended on buildings up to 5 storeys high. Water supply is made normal header tank pressure, at least 1800 mm above spray head.



Disinfecting Unit



COMPONENTS OF GARBAGE CHUTE SYSTEM



1.	Vent Tube with Insect Screen & Exhaust Fan
2.	Solenoid Valve
3.	Disinfecting & Sanitizing Unit
4.	Access Door
5.	Cleaning System & Brushing Device
6.	Control Panel
7.	Intake Throat
8.	Hopper Door
9.	Clamp Ring & Supporting Frame
10.	Swaged Joint
11.	Chute Tube
12.	Cleaning & Fire Sprinklers
13.	Fire Cut Off Door
14.	Elbow
15.	Garbage Container
16.	Compactor

1

VENT TUBE WITH INSECT SCREEN & EXHAUST FAN

Vents are installed at the top of the chutes, usually above roof level this ventilator maintains a smooth flow of fresh air within the refuse chute. The foul air exhaust fan helps prevent the escape of any bad odors or gases released by the garbage material.

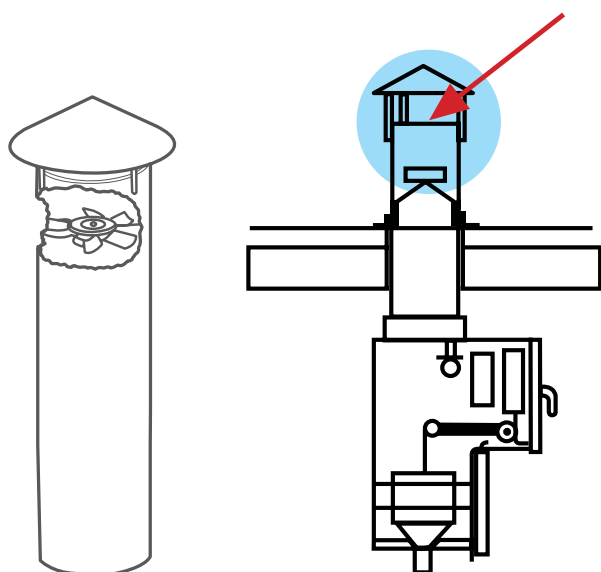
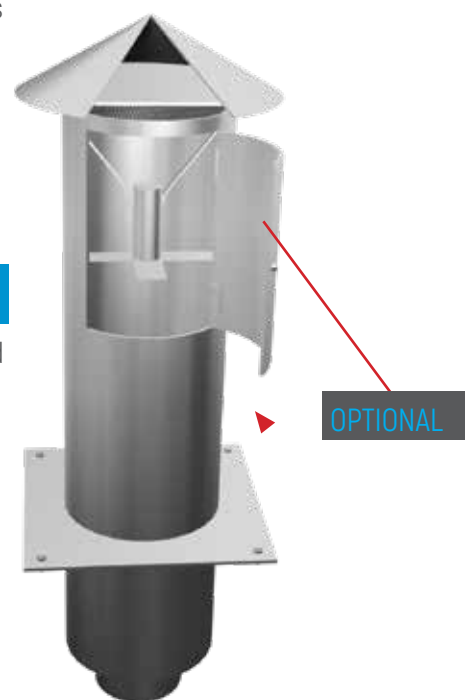


Automatic Foul Air Exhaust Fan

Installed at the top of the chutes, usually above roof level this ventilator maintains a smooth flow of fresh air within the refuse chute. It normally changes the air by approximately 50 times per one hour. The foul air exhaust fan helps prevent the escape of any bad odors or explosive gases released by aerosols etc, through refuse hoppers or into the refuse room.

Technical Specification

The fan from SFSP has air displacement 1820 m³/h. Fan motor, Class H tropicalized continuously rated, 1300 RPM.



2

SOLENOID VALVE

Electrically operated valve controlling the flow of water to the sanitizing unit.



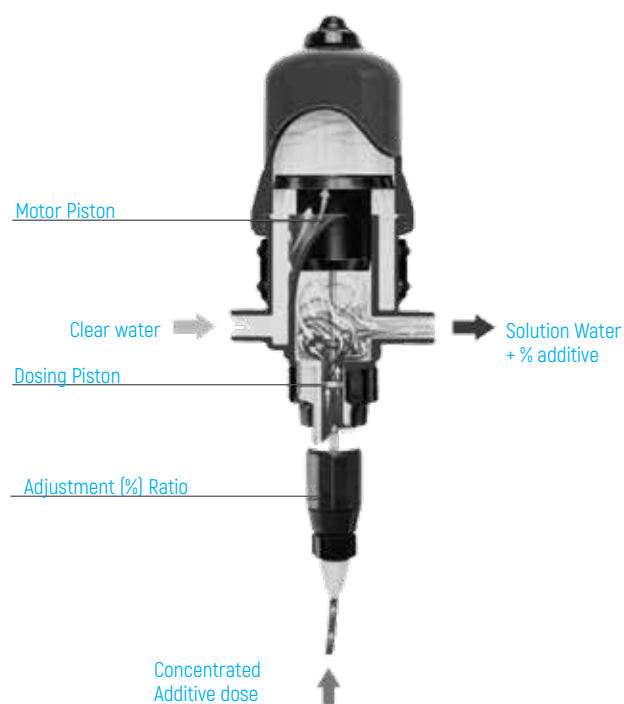
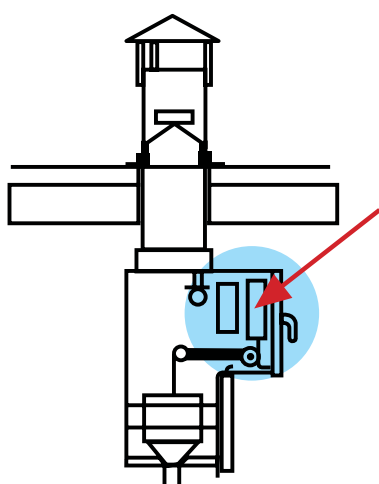
Description	Solenoid Valve
Quantity	One Unit per Chute
Location	Behind Access Door

3

DISINFECTING & SANITIZING UNIT

It is part of the automatic cleaning system of the chute, the sanitizing unit mixes soap along with the water where by the interior surfaces are sprinkled with water from alternate floors by sprinklers of Capacity.

It is recommended for use with every chute installation where proper operation and maintenance of the sanitizing unit reduces the immersion of strong odors and germs.

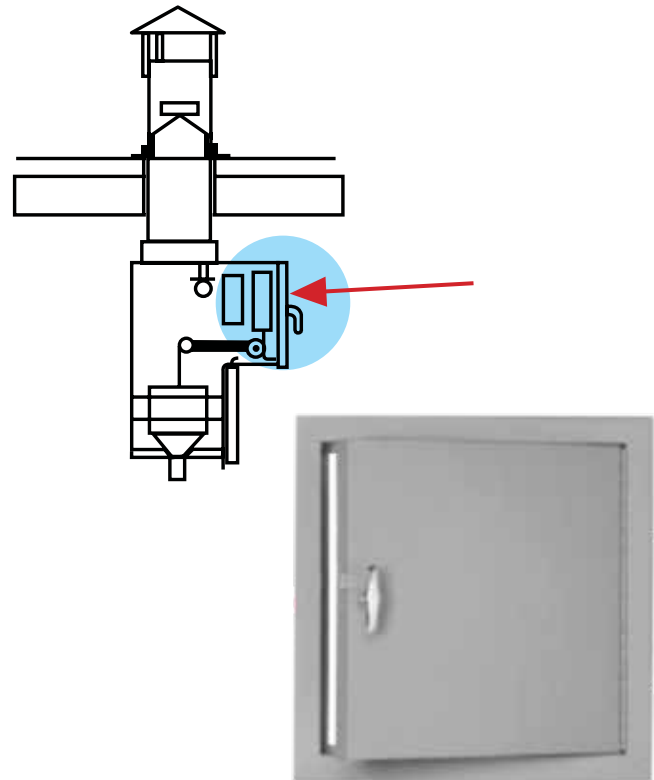


Description	Disinfecting & Sanitizing Unit
Quantity	One Unit per Chute
Location	Behind Access Door

4

ACCESS DOOR

Access door is located below the vent tube on the last floor. It is used for accessing the equipment in case of maintenance or revision of the chute. When opening the access door, the equipment located inside consists of the motor unit, solenoid valve, brush, disinfecting and sanitizing unit, designed to give manual or automatic brushing of the internal surface of chute.



Description	Access Door	
Quantity	One Unit per Chute	
Location	Last floor (Mechanical Room)	

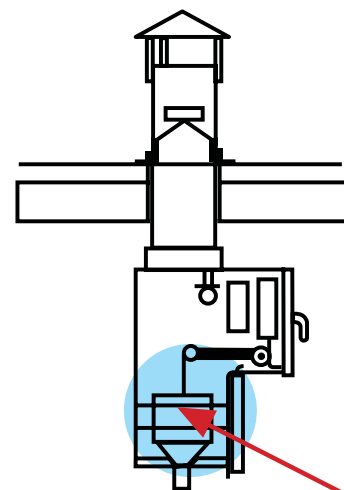
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CLEANING SYSTEM & BRUSHING DEVICE

Chute cleaning system specifically designed to clean the total vertical length of the internal surface of all chutes, where it includes brush unit and motor unit.



MOTOR



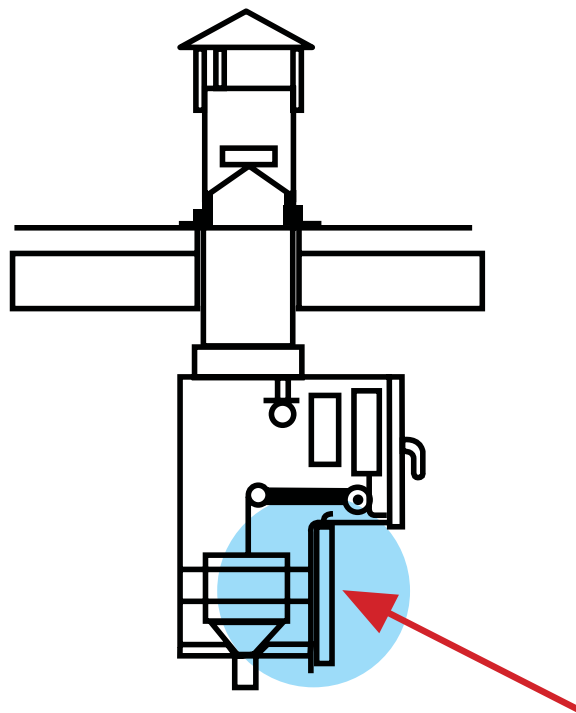
Description	Motor Unit
Quantity	One Unit per Chute
Location	Top of Chute

Description	Brushing Unit
Quantity	One Unit per Chute
Location	Attached by cable or wire to motor axel

6

CONTROL PANEL

Controls the entire automated systems within the chute; operates the cleaning system, controls the function of electro-magnetic door locks with the presence of an emergency button which isolates electricity and stop all the running functions.

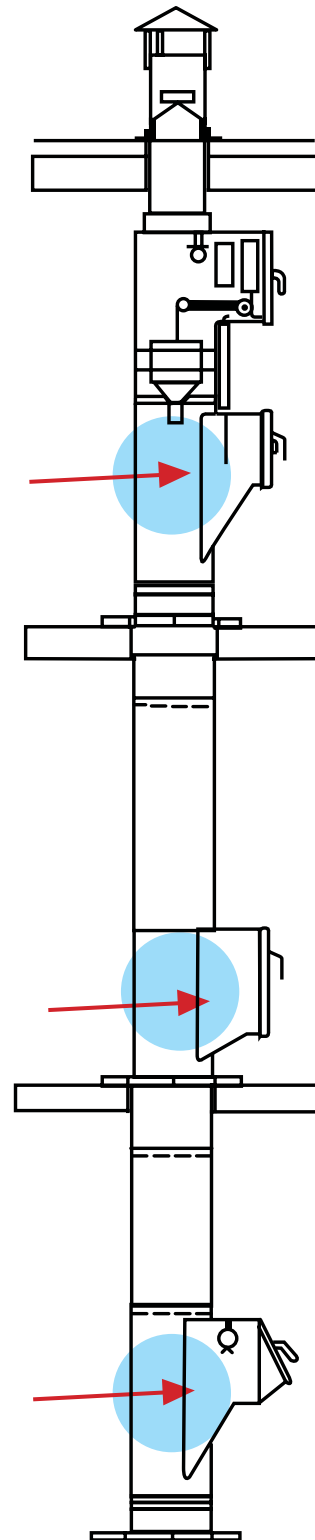


Description	Access Door
QUANTITY	One Unit per Chute
LOCATION	Below Access Door or at ground Floor

7

INTAKE THROAT

For each floor there is an intake throat for the hopper door...



Description	Intake Throat Cylinders
LOCATION	Through the Chute Height

8

HOPPER DOOR

For each floor there is an intake throat for the hopper door...



Hopper doors are provided in the service room on each floor and are designed to eject loose or bagged refuse (discharge garbage) directly into a refuse chute or a container. Hopper doors have an effective self-sealing system.

General

SFSP refuse hoppers are supplied with SFSP refuse chutes or supplied for separate fitting as independent or replacement hoppers. Designed and can be eject loose or bagged refuse directly into a refuse chute or a container.

Materials and manufacture

Factory fabricated with a robust welded steel construction. The double skinned satin stainless steel facings have a special fire resistant core giving a 1 1/2 hour fire rating.

Finish

Base and side cheeks from epoxy powder coated mild steel sheet.
Door facings in stainless steel.

Operation

Hopper door pivots on an anti vandal hinge and is counter balanced to be self closing and self sealing against a fire resistant seal. SFSP hoppers are specially designed to prevent blockages inside refuse chutes.

Application

For use with refuse chutes of 500, 550, 600, 700, 800, and 900mm internal diameter or as independent replacement hoppers.

Hoppers comply with BS 476 and BS 5588

Smoke resistant : meets BS 476 section 31.1

Fire resistant : meets BS 476 part 22, section 6

Flush fitting : in accordance with BS 1703 6.3.3.5

Self closing : hopper door quietly and safely self closes after every operation in accordance with BS 1703 6.3.3.4

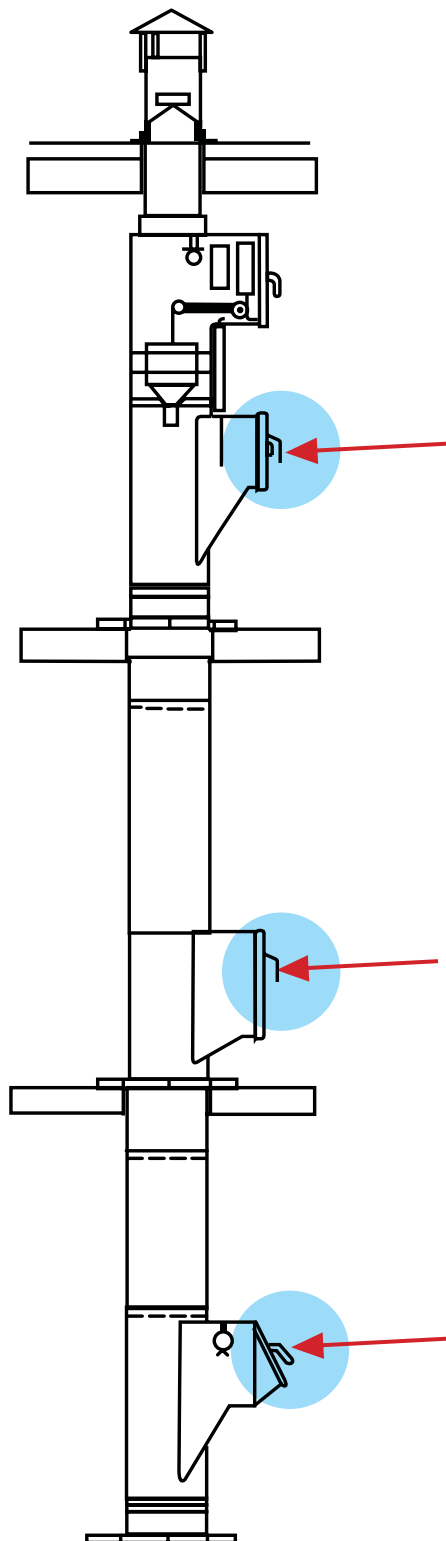
Hopper doors are made out of stainless steel or primed enameled steel.



DOOR LOCK



LAMP



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

Chute Diameter	Lengths	Width
500 mm	450x450 mm [18"x18"]	450x450 mm [18"x18"]
550 mm	450x450 mm [18"x18"]	450x450 mm [18"x18"]
600 mm	500x550 mm [20"x22"]	450x450 mm [18"x18"]
700 mm	600x900 mm [24"x36"]	600x900 mm [24"x24"]
800 mm	600x900 mm [24"x36"]	600x900 mm [24"x24"]
900 mm	700x950 mm [28"x36"]	700x950 mm [24"x24"]

Description	Hopper Doors
LOCATION	Through the Chute Height

ELECTROMAGNETIC DOOR LOCK (ELECTRIC INTERLOCK)

Introduction

Electromagnetic door locking systems are used to enhance the safety of garbage and linen disposal chute systems; although not required by law, they considerably improve and ensure proper operation of intake doors.

Application

Electric latches can be incorporated in tipping hopper and side-hinged door fixtures; they can be coupled to warning light indicators, signal light indicators, smoke and fire alarms so that the doors remain closed in an emergency situation. Coupled with timers they can be used to control and dictate operating hours of the chute system. Door control is made at the central switchboard so that when one door is open, all others remain closed.

This arrangement prevents injury to operating personnel by a falling bag should the chute be used simultaneously at two different levels in disposal, for instance.

Design

Electromagnetic door locking systems are fitted under the filler frame on tipping hopper and bag intake doors. In the door leaf a falling latch is incorporated which can be opened in an emergency by a simple allen key.

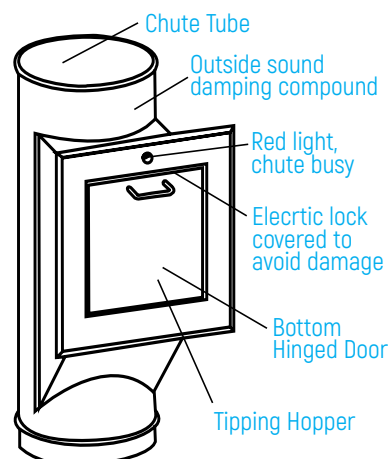
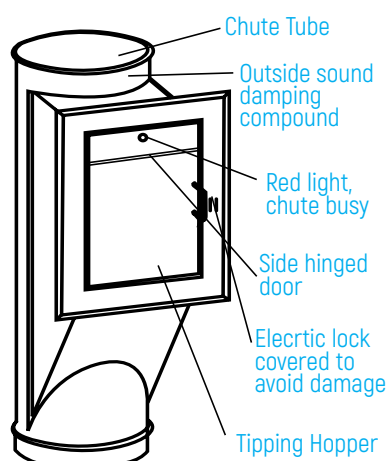
The lock is operated via a green illuminated push button; a red indicator lamp signaling that the chute has no access. All components of a door locking system and the operating controls are connected during installation and the final connection to the power unit is done by the main contractor.

Operating instructions

- 1- All doors shall be locked when the chute cleaning systems are in operation.
- 2- Doors can only be opened individually, a feedback contact preventing opening of other doors; an indicator lamp on the switchboard indicates that a door is open.
- 3- When all doors are locked it may be that the smoke detectors or fire alarms have been triggered.
- 4- When work is going on in the collection room, personnel safety should be ensured by closing all doors to the system via the switchboard.

Supply requirements & specification

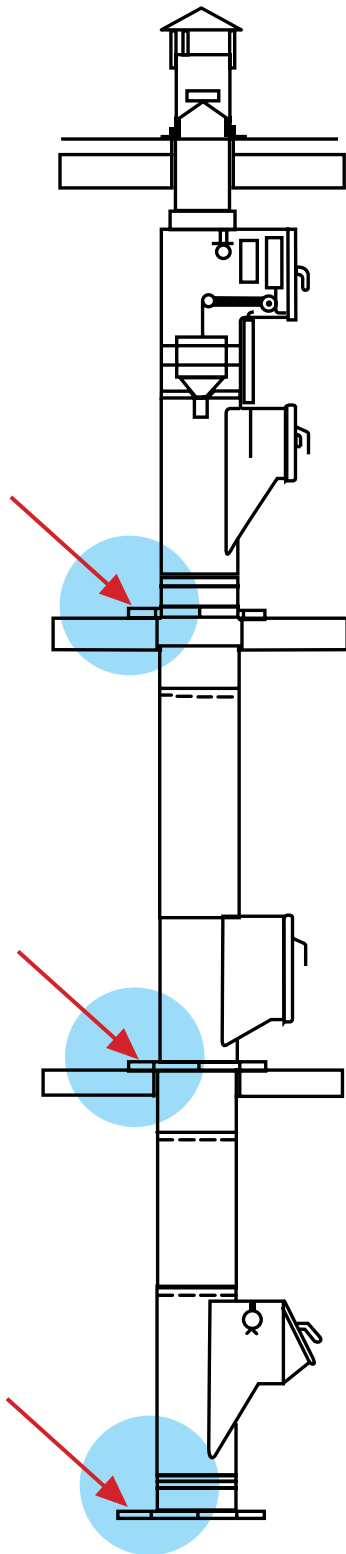
- Electro magnetic solenoid bolts.
- 220/240 volts. 50/60 Hz. 10 Amps max. or 120/240 volts. 50/60Hz 5 Amps max.
- Low power factor
- Pre-set timer. Electric supply as above
- Delay on/off. Range 5/200 seconds.



9

CLAMP RING & SUPPORTING FRAME

Cut, shaped and drilled from 35x35x3 mm or (other sizes are applicable for use) Mild steel angle with a rigid, welded construction. The frame holds a metal clamp band. The frame is rust proof for internal use and hot dip galvanized for external use.

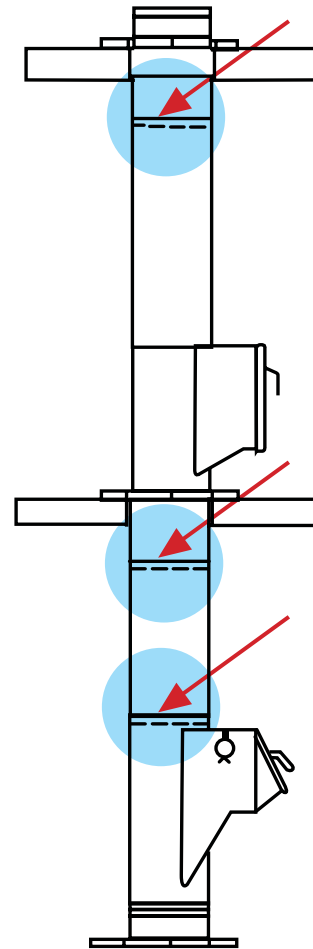
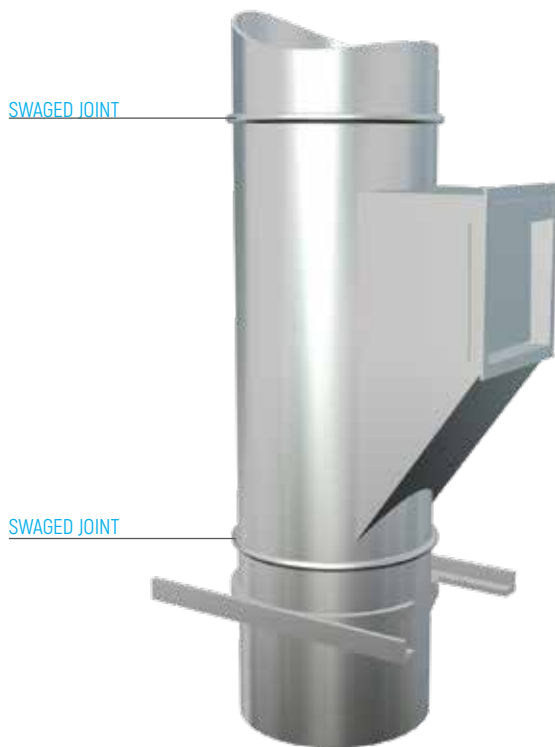


Description	Clamp Ring
QUANTITY	One set per floor
LOCATION	At Each Floor
Description	Supporting Frames
QUANTITY	One set per floor
LOCATION	At Each Floor

10

SWAGED JOINT

Used to join certain section of duct.



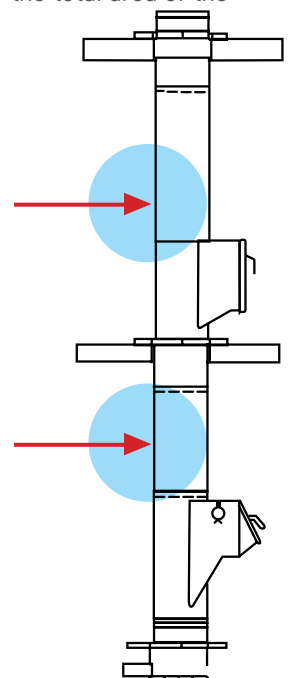
11

CHUTE TUBE & SOUND DAMPING

Chute Tube gives an unimpeded dumping of refuse within a chute, the best shape has proved to be circular.

Sound Damping

All metal refuse chutes can produce, uncomfortable levels of noise. A factory applied coating of a proven sound dampening compound will dramatically reduce noise level produced by resonant vibrations in metal refuse chutes. Factory applied at the same thickness as the metal substrate or more and over the total area of the exterior surface of the refuse chute, (except refuse, hopper face and side hinged door faces).



Description	Chute Tubes SS 304, 1.5 mm thickness
LOCATION	Through the Chute Height

CLEANING & FIRE SPRINKLERS

Cleaning Sprinklers

Spray head located in all floors behind the door opening for cleaning issues.

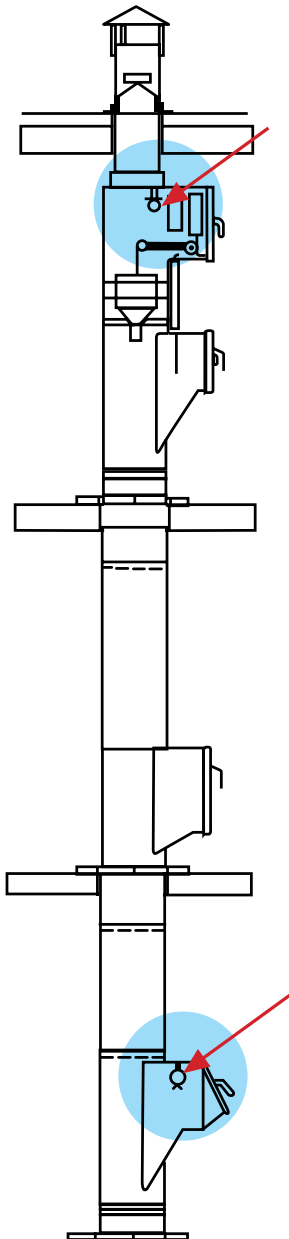
Fire Sprinkler:

Glass bulb sprinklers installed for fire detection inside the chute in each floor.
1/2" IPS, 68°C (165°F).

Glass Sprinklers can be used in conjunction with a normal water supply at a pressure of up to 8 bar.

Smoke Detection System:

This system shall be provided by the fire alarm subcontractor.



Spray nozzle used for
cleaning the chute



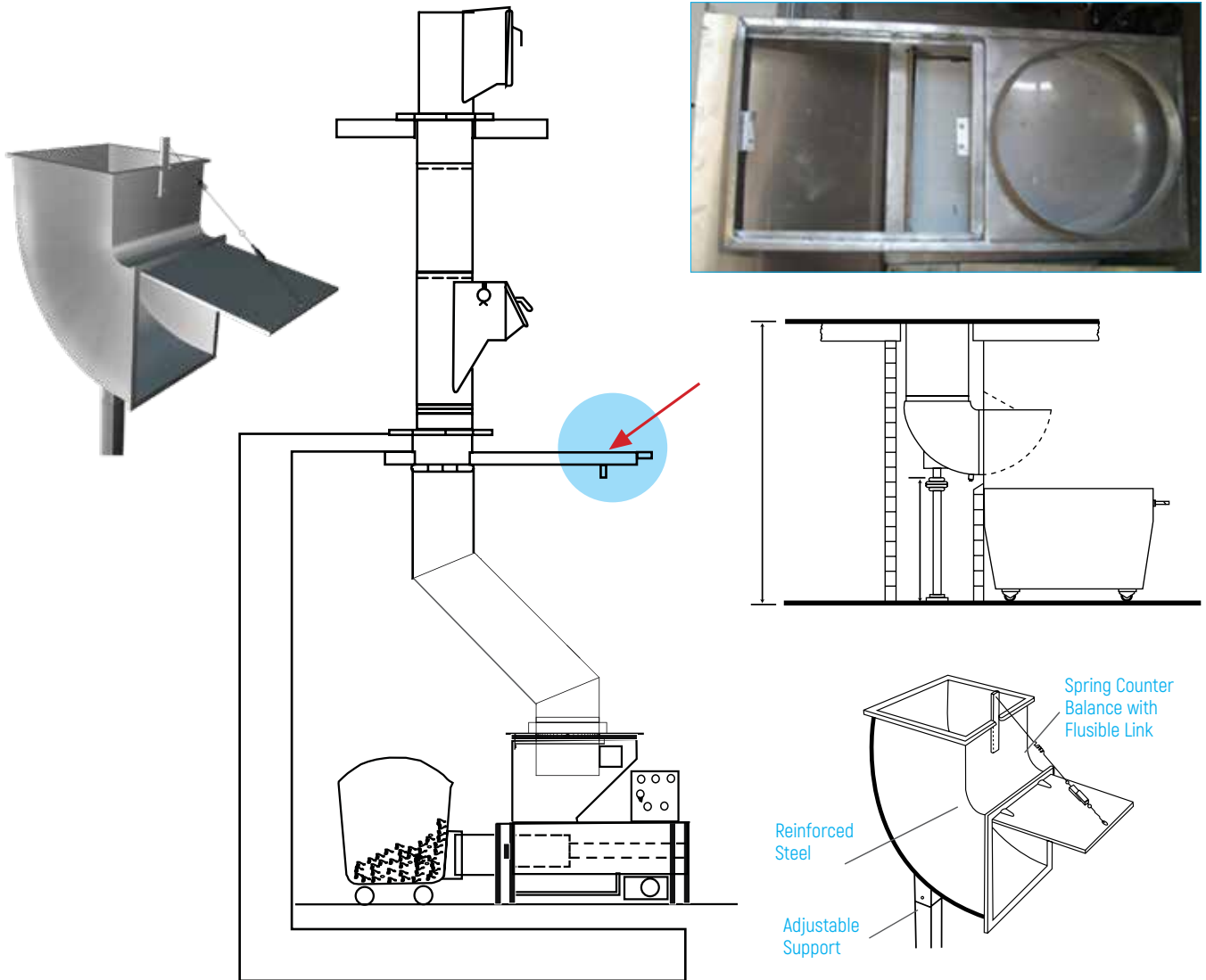
A fire sprinkler

Description	Spray Nozzle
LOCATION	Inside the Intake Throat
Description	Fire Sprinklers
LOCATION	Inside the Intake Throat

13

FIRE CUT OFF DOOR

Fire Cut Off Door has a horizontal rolling door held by a spring on each side connected to a fusible link. In case of excessive heat (or fire) the link gets fused at 165° F (68°C) causing the door to roll shut. The discharge is 1.5 hours fire rated.

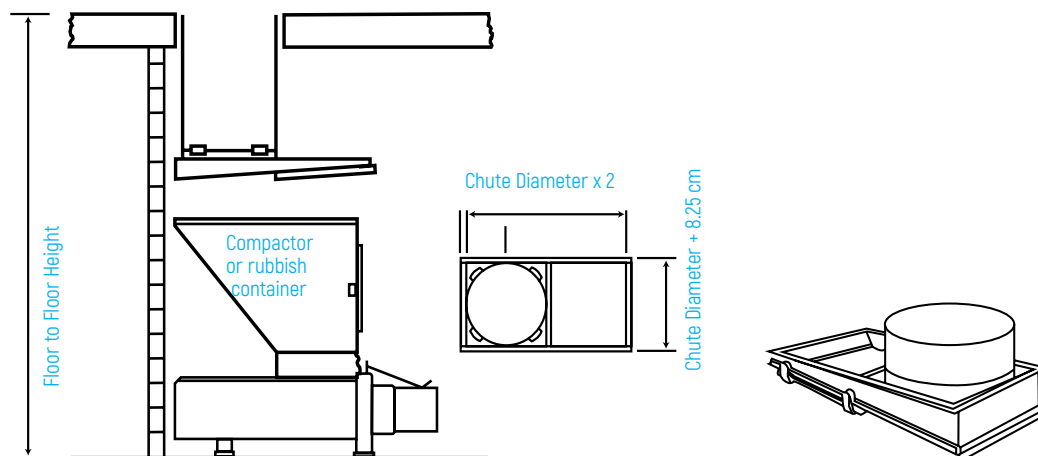


Type 'C' Automatic Fire Shutter Door

This type is widely used in both garbage & linen chutes. It has a horizontal rolling door held by springs on each side connected to a fusible link. In case of excessive heat (or fire) the link gets fused at 165°F (68°C) causing the door to roll shut. The discharge is 1.5 hours fire rated.

The Automatic Fire Shutter Door also has a manual closing facility and can be used in certain location as both a fire shutter-door and a manual cut off door.

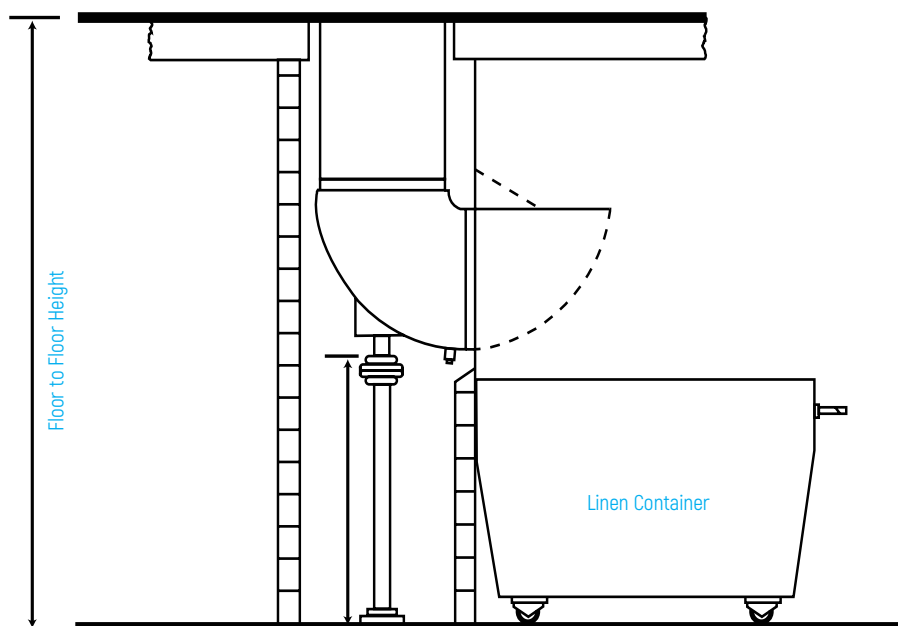
Fire Cut Off Door has a horizontal rolling door held by a spring on each side connected to a fusible link. In case of excessive heat (or fire) the link gets fused at 165° F (68°C) causing the door to roll shut. The discharge is 1.5 hours fire rated.



Type 'D' Top Hung Automatic Fire Door

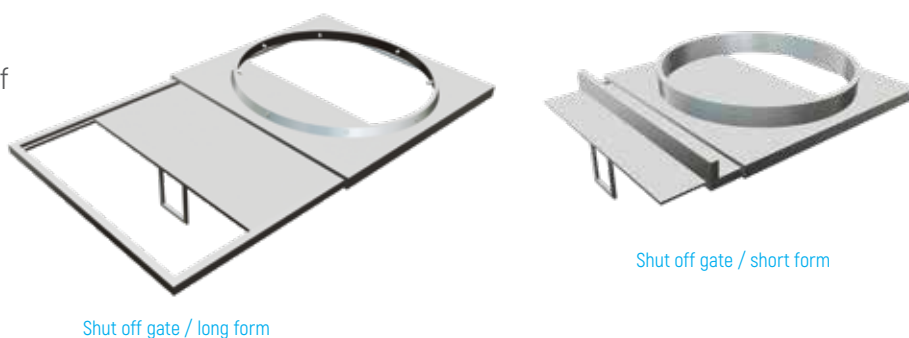
Designed for use where it is not possible to fit a standard automatic fire shutter door. The top hung door gives the same 1.5 hours fire protection, but without the same degree of operator safety (Safety fencing is recommended).

Operation is by the top hinged counter balanced door pulling against a fusible link. In case of fire the door drops shut and is held closed by two retaining catches. Suitable for use with 600mm and 800mm linen chutes.



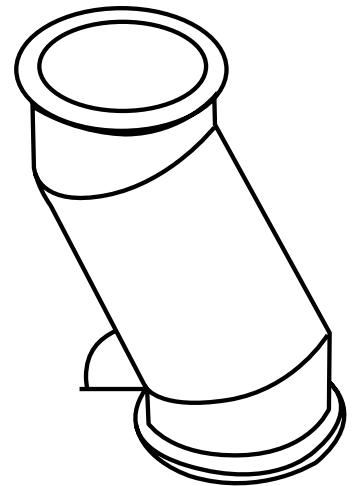
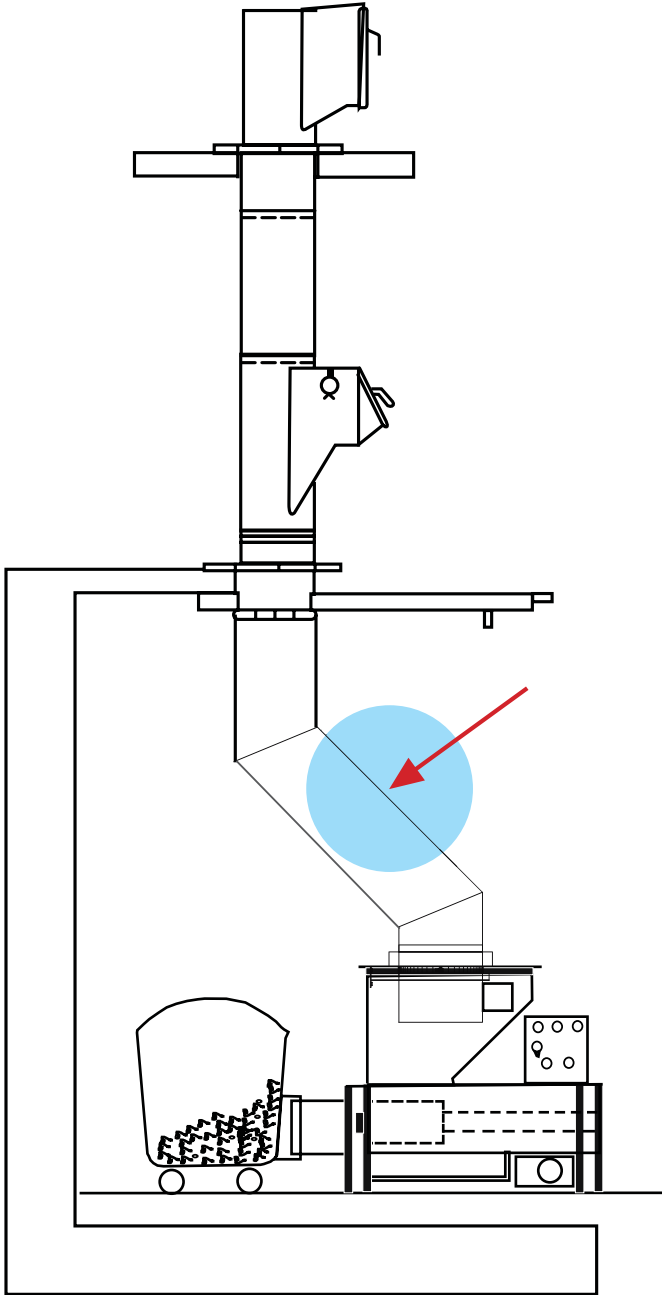
Manual Cut-off Door

Shuts and cuts off chute for cleaning, removal of containers or maintenance of refuse compactors or shredders.



Offsets

Factory fabricated from the same material as the refuse chute, but in a heavier gauge to withstand the impact of falling bags. Offsets should not be less than 45° from the horizontal. Offsets are fabricated to all diameters of refuse and linen chutes provided by SFSP.



TYPE MGB

Capacity:

1.1m³

Material:

Hot-dip galvanized steel (DIN 30700)

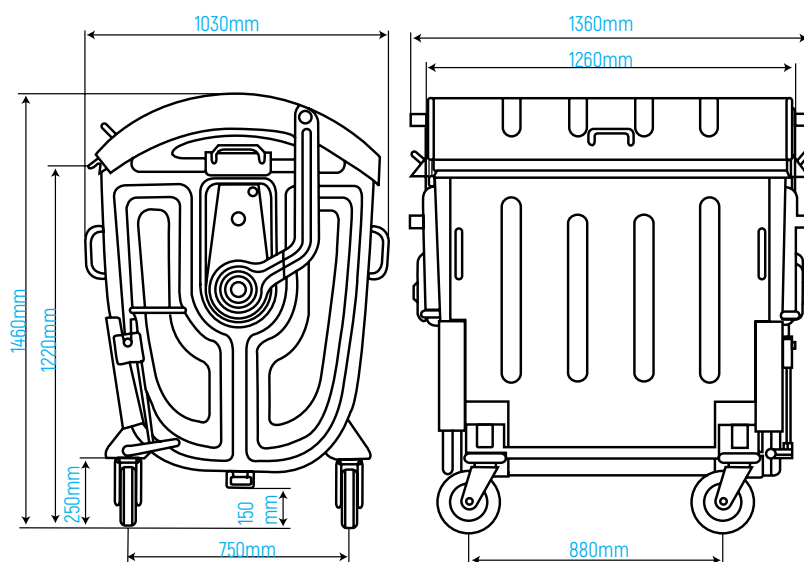
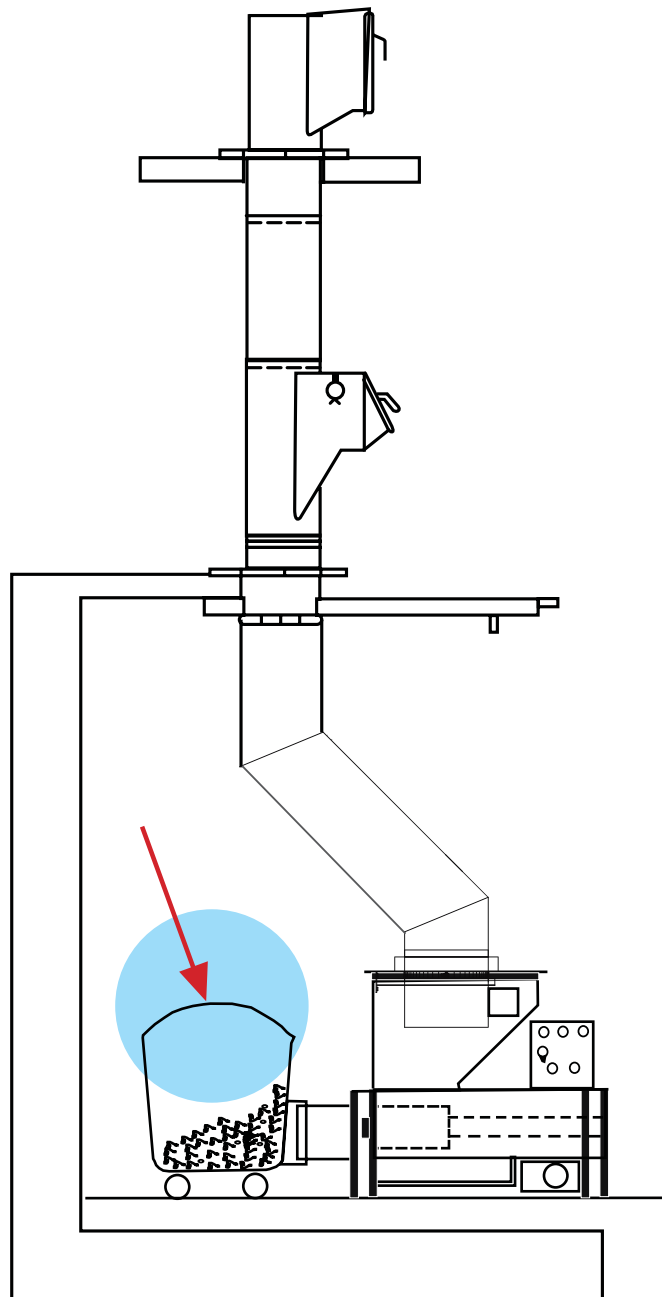
Specifications:

- Body and lid hot dip galvanized
- Form stability through slotted all around running tube profile
- Dome lid hot dip galvanized vaulted and reinforced
- Special tension spring for easy opening
- Remains in 2 positions with an automatic locking device
- Moulded rubber hand protection
- Frontally operated central locking
- Water drain for cleaning purposes
- 4 swivel wheels 3600 maintenance free ball bearing with solid rubber tires
- Carrying capacity per wheel 400 kg
- Lateral central locking device of two front wheels

Options:

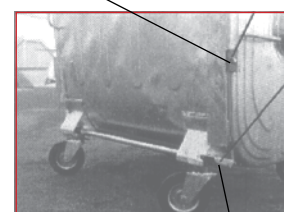
- Instead of central locking, brake on single wheel
- Towing gear with trailer bracket and coupling, heavy wheel implementation
- Colour coded lid
- Slot opening in lid for recycling waste
- Lid locking device
- Special body treatment for collecting hazardous waste (filling stations, vehicles workshops etc.)





Frontal Operation of
Central Locking

Lock



Foot Pedestal

TYPE MGD 2.5

Capacity:

2.5 m³

Material:

DIN 30738 hot-dip galvanized steel

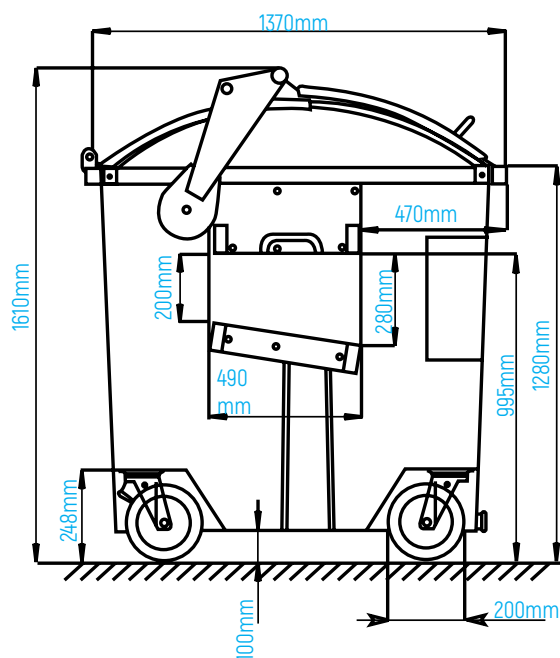
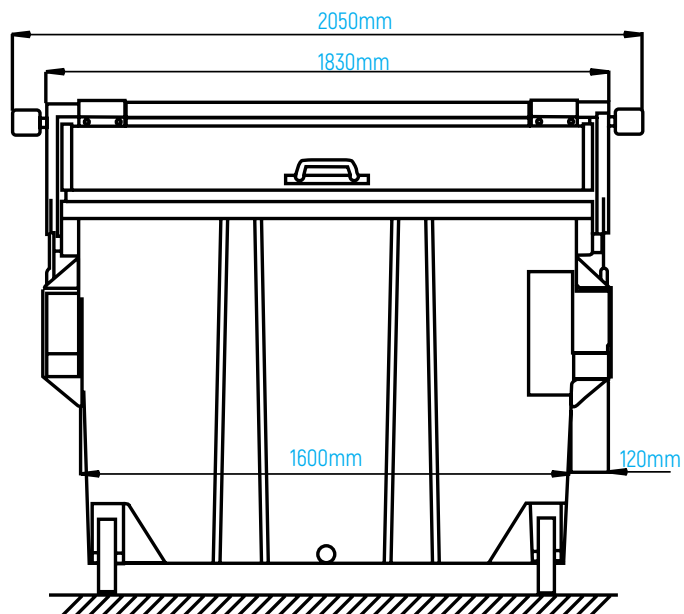
Specifications:

- Hot dip galvanized body
- Formstability through box-profile framework
- Strengthening ribs at body, bottom reinforced with stable wheel cases
- 2x360° swivel wheels with direction fixing device at the front 200 mm diameter
- 2x360° swivel wheels at the back with single wheel stop 200 mm diameter
- Galvanized sliding lid
- Lateral and rear sliding lid

Options:

- Skids instead of wheels
- 2 fixed wheels 200 mm diameter at the front
- Central brake for the rear swivel wheels
- Interlocking device on the rear steering wheel
- Towing gear with heavy-duty-wheels for collective - transportation
- Reflex warning-foil at the corners
- Owner-stamping in the lid
- Slot-opening in the fore lid
- Locking device of the fore lid
- Locking device for the rear lid for controlled collection with rear lifts
- Horizontal sliding grip at the rear
- RAL color painting on zinc coating primer



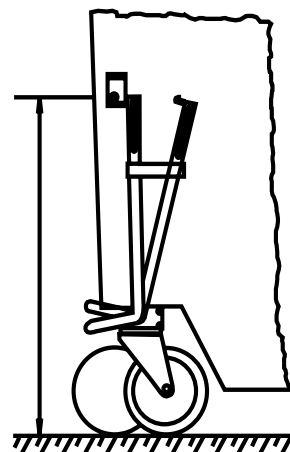
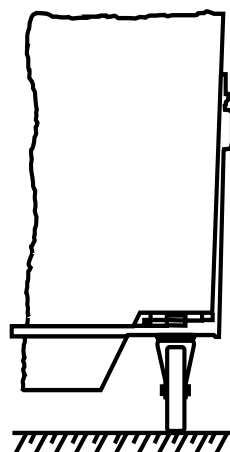


Interlocking device of the rear swivel wheels:

The operating lever is optional to the waste disposals at the receptacle left or right behind. This lever is welded with a spindle which connects the brake equipment of the two steering wheels.

Essential advantages of this system:

1. Lateral order of the lever-short way of the worker of the vehicle to the activity-lever.
2. Trouble-free activity of the interlocking device under optimal place utilization of the receptacle (House-walls or alike)



TYPE MGD 4.5

Capacity:

4.5 m³

Material:

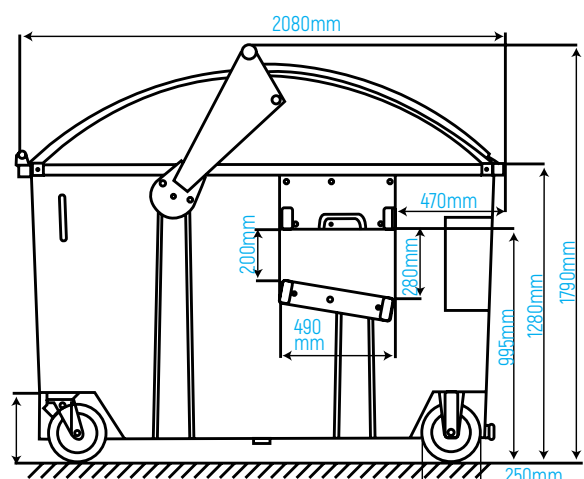
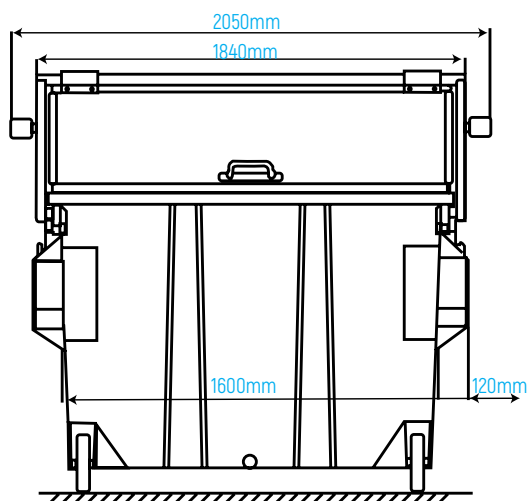
Galvanized steel

Specifications:

- Hot dip galvanized body
- Formstability through box-profile frameworks
- Strengthening ribs at container body, bottom reinforced and stable wheel cases
- 2 fixed wheels at the front 250 mm diameter
- 2x360o swivel wheels at the back with single wheel stop 250mm diameter
- Galvanized sliding lid
- Lateral and rear slide grips with steering handles

Options:

- Skids instead of wheels
- 4x360o swivel wheels instead of 2 fixed wheels at the front, with direction fixing device at the front wheels
- Interlocking device on the rear steering wheel
- Towing gear with heavy-duty
- Wheels for collective-transportation
- Reflex warning-foil at the receptacle-corners
- Owner-stamping in the lid
- Slot-opening in the fore lid
- Locking device of the fore lid
- Locking device of rear lid for controlled collection with rear lifts
- Horizontal sliding grip at the rear
- RAL color painting on zinc coating primer



TYPE MGC

Capacity:

1.53 m³

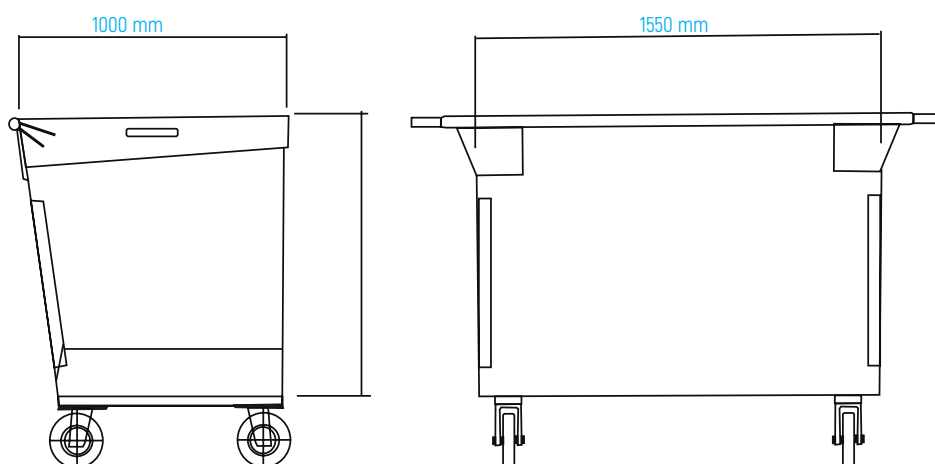
Material:

Powder coated

Specifications:

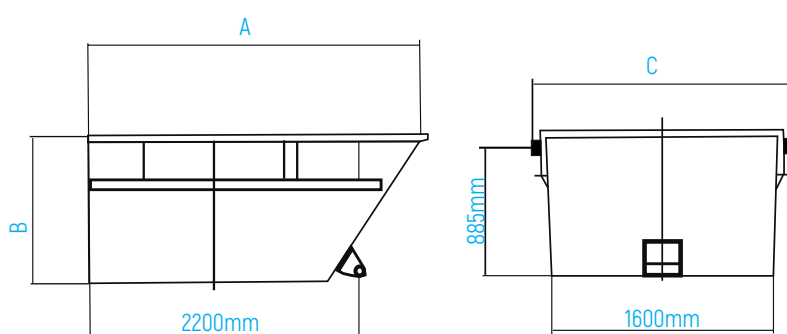
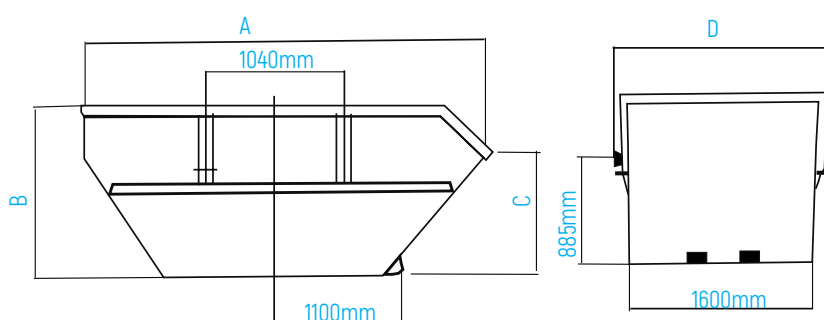
Refuse container capacity 1.53 m³.

- All made of high tensile steel ST52-3, 2mm thick, reinforced at front top edge by 30mm diameter round bar.
- Top edges surrounded by U shaped channels (3mm thick).
- Four heavy duty swivel caster wheels of 8" diameter two with brake and two without brake.
- Continuous inside welding.
- Two coats of epoxy primer and two coats of final color on request.
- Container without cover.
- Made to be lifted by the refuse compactor.



TIPPING TRUCK CONTAINER SKIPS

TYPE HM



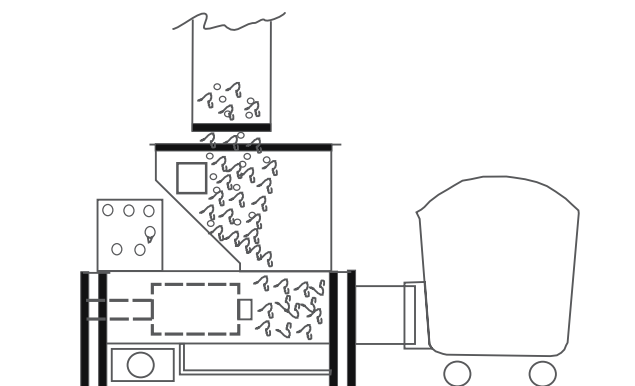
Type	HM 1	HM 2	HM 3	HM 4	HM 5
Capacity	4m ³	7m ³	10m ³	12m ³	4.4m ³

Dimensions	HM 1	HM 2	HM 3	HM 4	HM 5
A	2950	3370	4100	4100	2950
B	1100	1500	1700	2000	1300
C	800	840	1100	1100	1880
D	1870	1850	1850	1840	

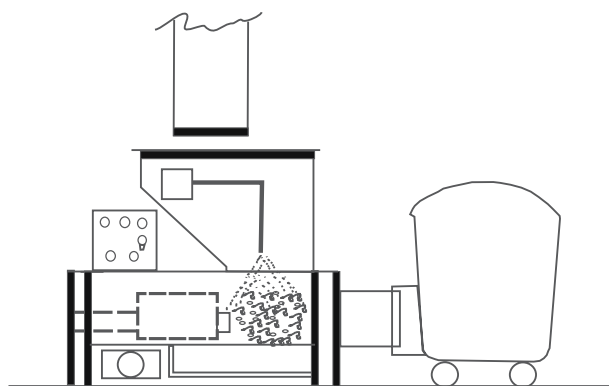
TYPE H 150

1. Operation: Automatic hydraulically operated.
2. Operating Pressure: 40, 000 lbs.
3. Compaction: Compacts refuse 15-20% of original volume.
4. Packaging: Packages refuse directly into heavy gauge plastic sacks or containers.
5. Capacity: 750kg/hr.
6. Compaction Chamber: 0.20 m³ with a machine cycle time of 40 seconds giving a theoretical compaction volume of 8 m³/hr.
7. Construction Compactor: Strengthened 10mm steel plate.
8. Compacting Ram: The compacting ram is made from 6mm plate with the face of the ram increased to 25mm plate to effectively handle the 18 ton pressure.
9. Compaction chamber: Shall have hardened steel shearing blades.
10. Hydraulic Power Pack: Pre-packed fully connected integrally mounted system to develop over 3000 PSI. Normal operating pressure 1000 PSI (Approximately).
11. Motor: 40 Second cycle. Time 4 kw-1450 RPM.
12. Pump: Pressure balanced, external oval gear type.
13. Electrical control: Housed in a keyed access cabinet.
14. Other Feature: Repeat hammer action and automatic attendant alarm.

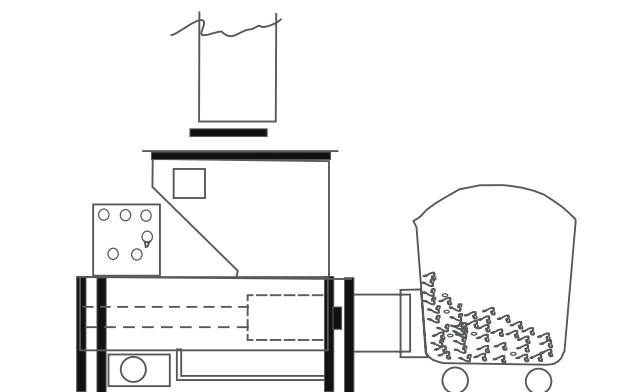




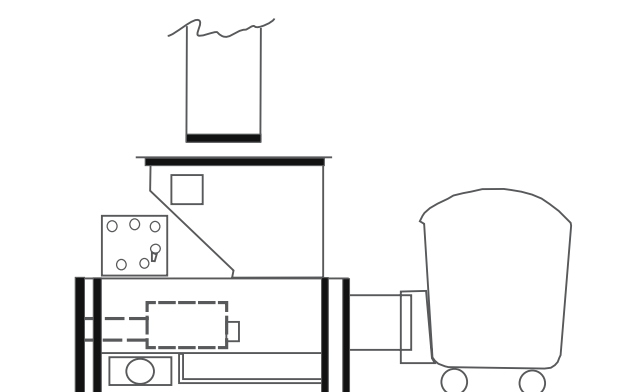
Refuse fed manually or falling down the chute directly into the compactor trips the photo electric cell. The compaction cycle commences



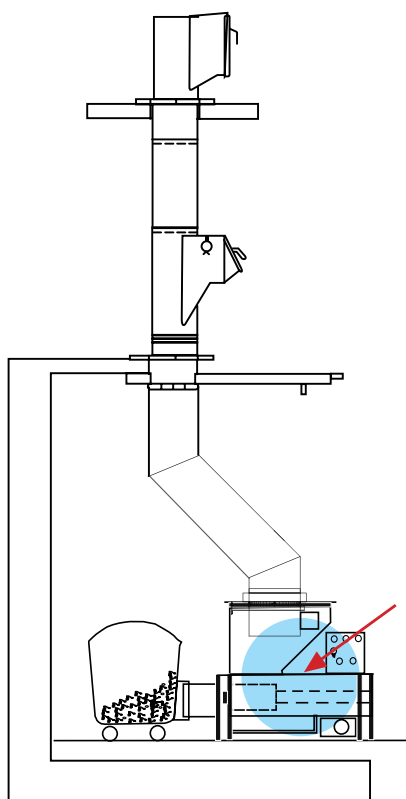
Refuse is automatically sprayed for with strong disinfectant to protect against insects and reduce any airborne smells.



Compactor ram pushes refuse through shearing teeth and then through compaction chamber into heavy gauge container.



When the compactor is full the attendant unloads container from compactor and wheels the container away. Fits empty container.



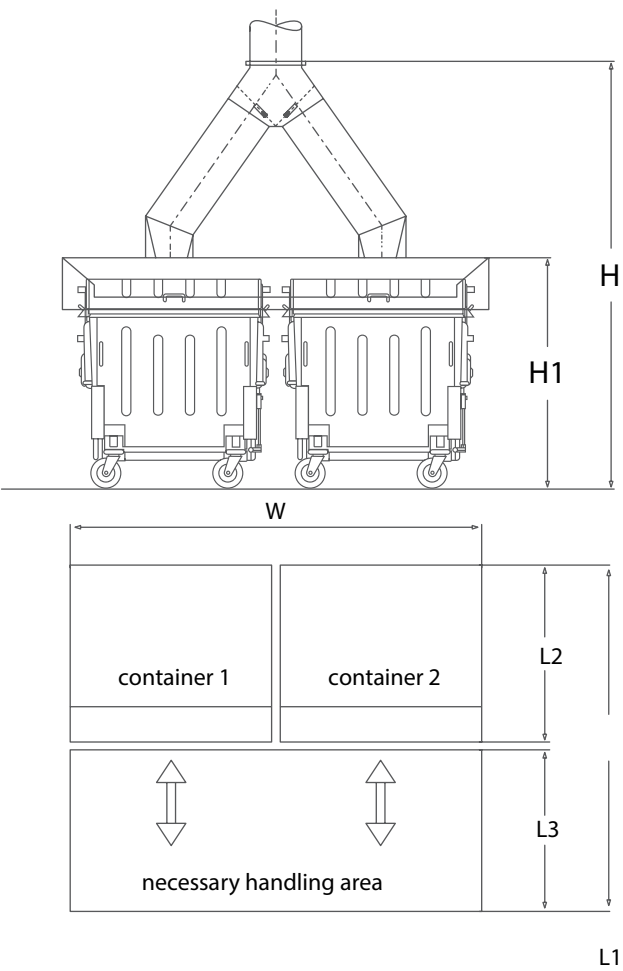
GARBAGE CHUTES SORTERS

DUO-SORTER

OPTION A

CONTAINER SIZE:
1.100 ltr

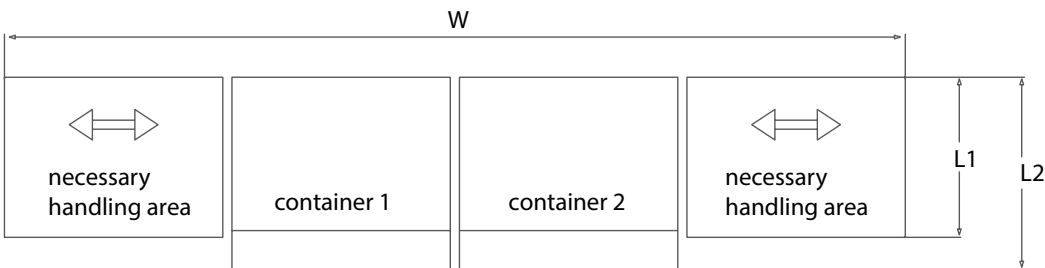
TOP-VIEW A1
container handling area
in front of the system



TECHNICAL DATA:

Dimensions	H	W	h1	L1	L2	L3
Standard	min. 2.500mm	2.800mm	1.500mm	2.300mm	1.200mm	1.100mm

TOP-VIEW A2
container handling area either left or right side of the system (or even both sides)



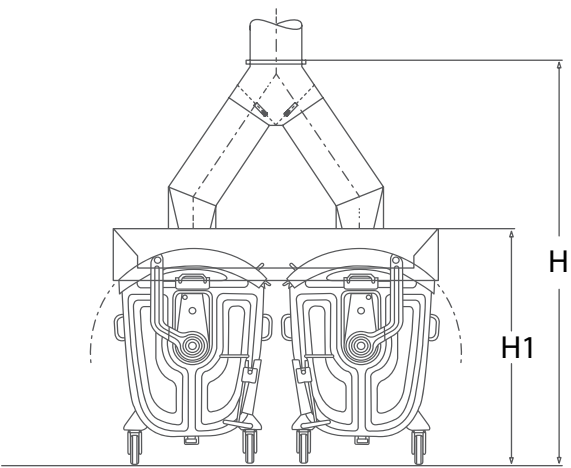
TECHNICAL DATA:

Dimensions	H	W	h1	L1	L2	L3
Standard	min. 2.500mm	4.200mm	1.500mm	1.100mm	1.200mm	1.400mm

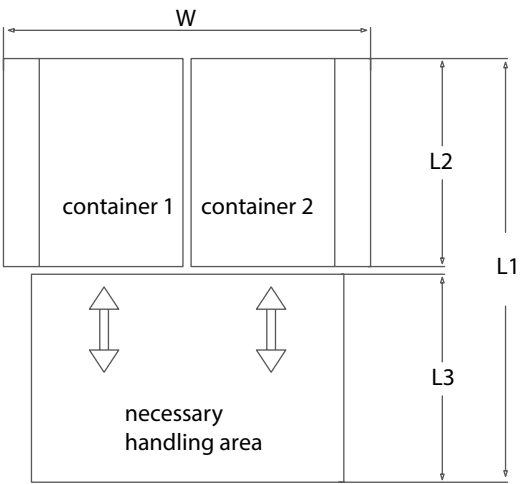
DUO-SORTER

OPTION B

CONTAINER SIZE:
1.100 ltr



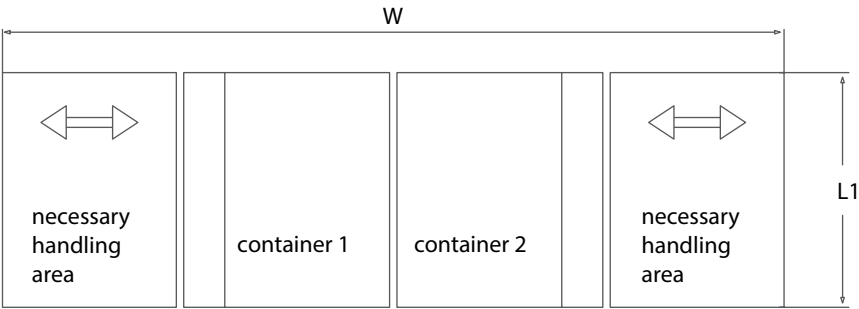
TOP-VIEW B1
container handling area
in front of the system



TECHNICAL DATA:

Dimensions	H	W	h1	L1	L2	L3
Standard	min. 2.500mm	2.400mm	1.500mm	2.800mm	2.400mm	2.400mm

TOP-VIEW B2
container handling area either left or right side of the system (or even both sides)



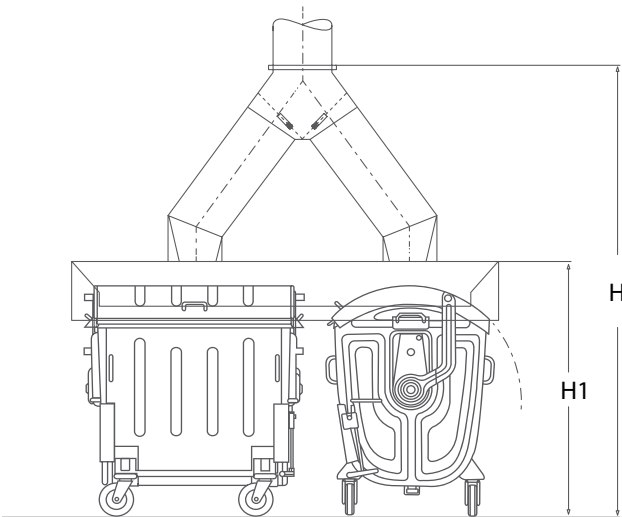
TECHNICAL DATA:

Dimensions	H	W	h1	L1	L2	L3
Standard	min. 2.500mm	3.500mm	1.500mm	1.400mm		1.100mm

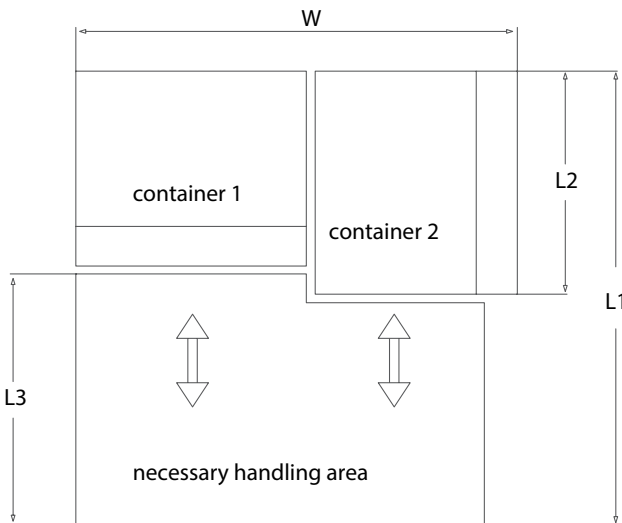
DUO-SORTER

OPTION C1

CONTAINER SIZE:
1.100 ltr



TOP-VIEW C1
container handling area
in front of the system



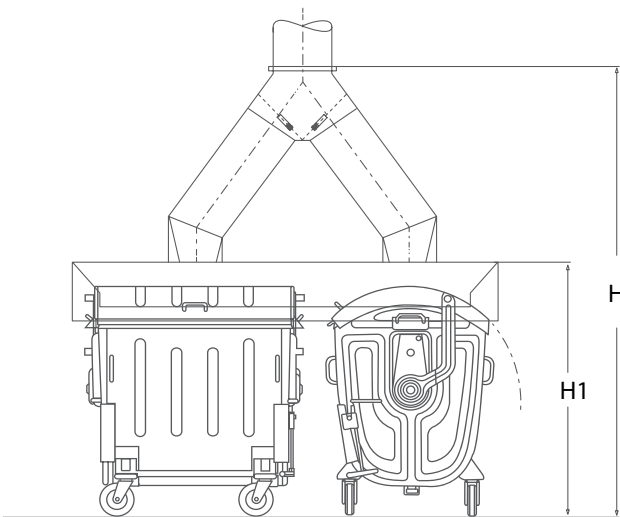
TECHNICAL DATA:

Dimensions	H	W	h1	L1	L2	L3
Standard	min. 2.500mm	3.600mm	1.500mm	2.800mm	1.400mm	1.400mm

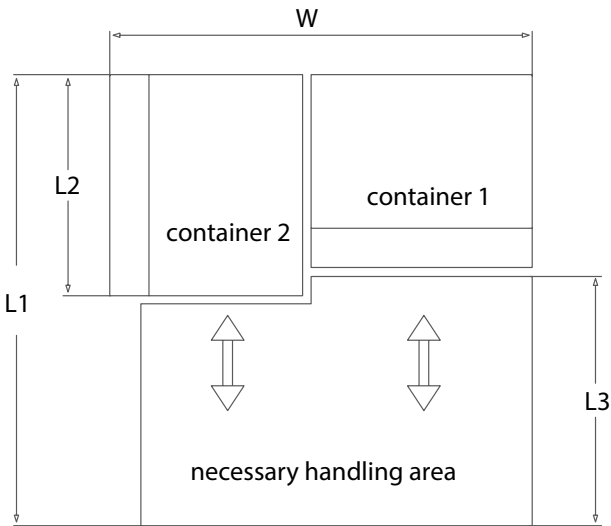
DUO-SORTER

OPTION C2

CONTAINER SIZE:
1.100 ltr



TOP-VIEW C2
container handling area
in front of the system



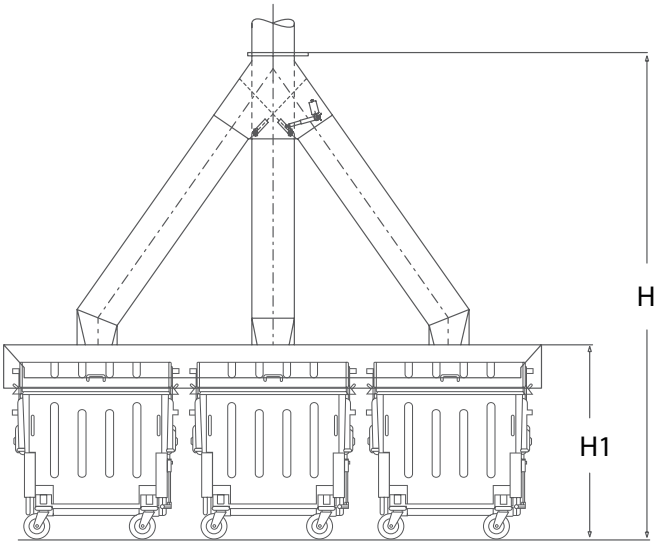
TECHNICAL DATA:

Dimensions	H	W	h1	L1	L2	L3	
Standard	min. 2.500mm	2.600mm	1.500mm	2.800mm	1.400mm	1.400mm	

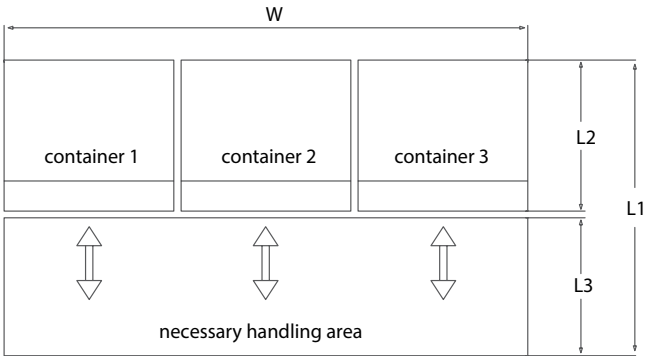
TRI-SORTER

OPTION A

CONTAINER SIZE:
1.100 ltr



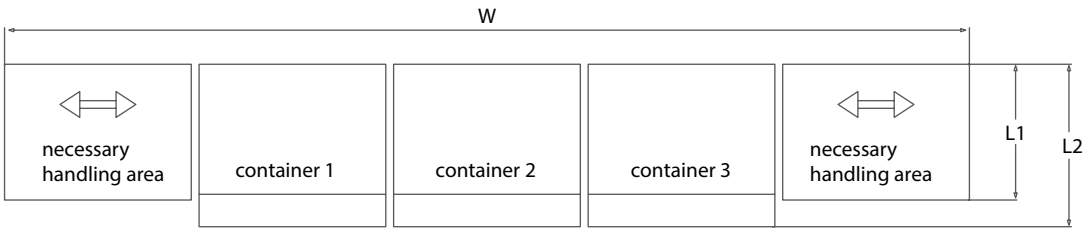
TOP-VIEW A1
container handling area
in front of the system



TECHNICAL DATA:

Dimensions	H	W	h1	L1	L2	L3	
Standard	min. 3.300mm	4.200mm	1.600mm	2.300mm	1.200mm	1.100mm	

TOP-VIEW A2
container handling area left or right side of the system
(or even both sides)



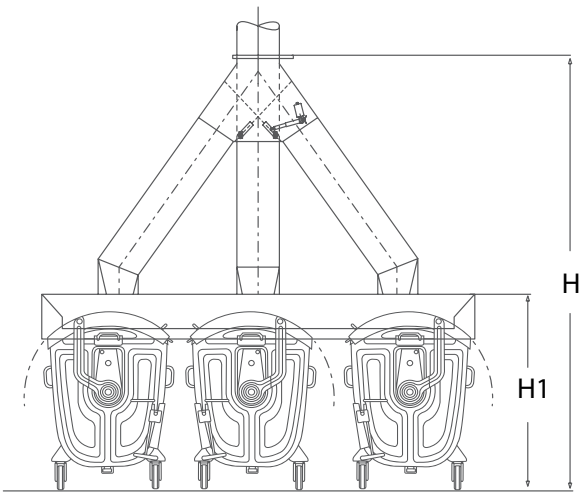
TECHNICAL DATA:

Dimensions	H	W	h1	L1	L2	L3	
Standard	min. 3.300mm	5.600mm	1.500mm	1.100mm	1.200mm	1400mm	

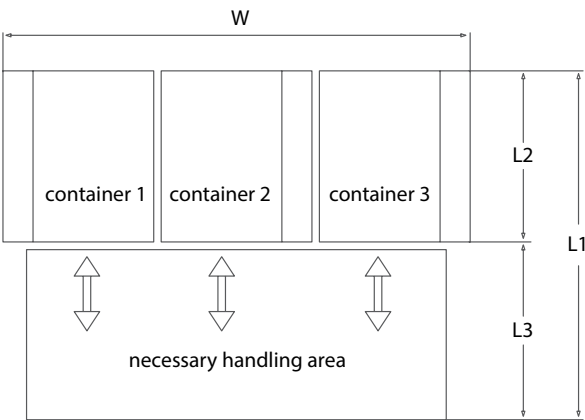
TRI-SORTER

OPTION B

CONTAINER SIZE:
1.100 ltr



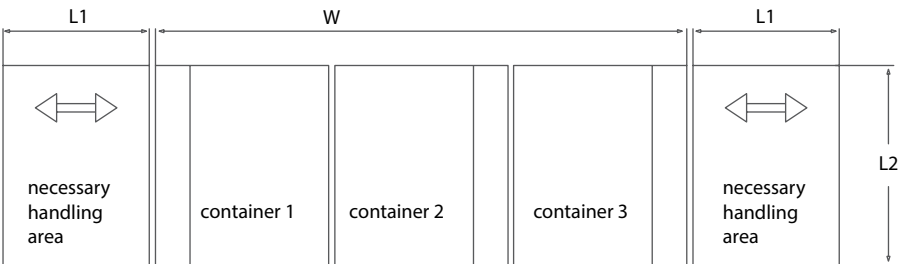
TOP-VIEW B1
container handling area
in front of the system



TECHNICAL DATA:

Dimensions	H	W	h1	L1	L2	L3	
Standard	min. 3.150mm	4.100mm	1.600mm	2.400mm	1.200mm	1.200mm	

TOP-VIEW B2
container handling area left or right side of the system
(or even both sides)



TECHNICAL DATA:

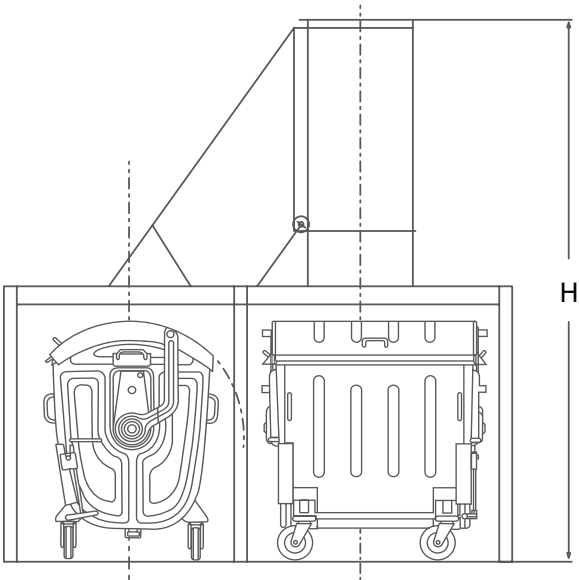
Dimensions	H	W	h1	L1	L2	L3	
Standard	min. 3.300mm	4.100mm	1.500mm	1.100mm	1.400mm		

TRI-SORTER

OPTION C1

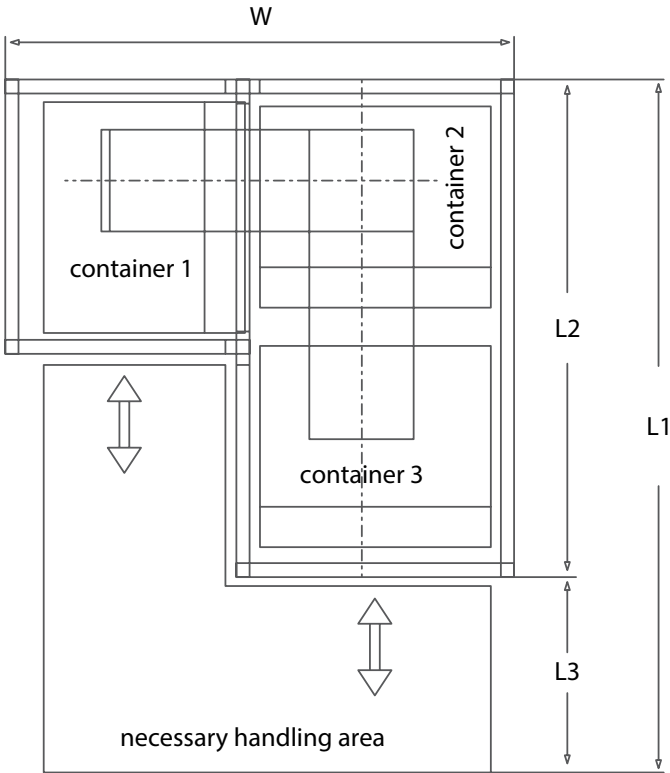
CONTAINER SIZE

1.100 ltr



TOP-VIEW C1

container handling area
in front of the system



TECHNICAL DATA:

Dimensions	H	W	h1	L1	L2	L3
Standard	min. 3.100mm	2.700mm	1.600mm	3.700mm	2.500mm	1.200mm

**TECHNICAL
INFORMATION**

TECHNICAL INFORMATION

Introduction

SFSP linen chutes are the most efficient method of quickly and economically disposing of soiled linen in multi storey buildings.

The dirty linen is usually bagged before loading into the chute. Side hung doors with large openings are therefore the normal standard on linen chutes. Hospitals generate about 3.0 kgs. of soiled linen per bed per day and a similar figure can be used for hotels. The increasing cost of using lifts and maintaining labour in hotels and hospitals reinforces the decision to install a linen chute.

Application

Original equipment installed in hospitals and hotels for the vertical movement of loose and bagged soiled linen.

Technical Information

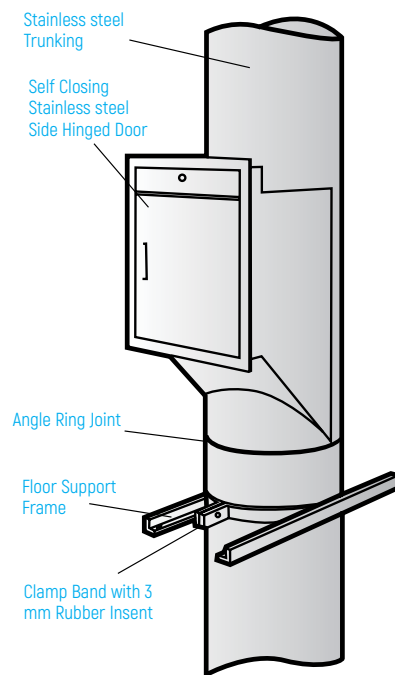
SFSP linen or laundry chutes have the same basic specification as refuse chutes. For details on the construction, material specification and choice please see previous pages. A full specification for SFSP linen chutes can be found in this section.

Linen Chute Sizes

Available in either 600 mm or 800 mm diameters though in practice the 600mm diameter is adequate for most purposes.

Linen Chute Doors

SFSP normally recommends the use of a 450 x 450 mm door for use with linen chutes and would also recommend the use of electric interlocks. Linen chute doors are side hung on stainless steel hinges, with either separate or master keyed locks. The doors are fully self closing on an efficient hydraulic self closer. Labels can be attached bearing the message 'LINEN ONLY' in english and/or the local language.



N.B. we can use side hinge door also for linen chute

Fire Safety

To meet British Standards of fire safety an automatic fusible linked fire shutter door with a 1 1/2 hour fire rating should be fitted to the bottom of the linen chute, in the linen collection room. Fire sprinklers are also recommended to be fitted at every second floor. The sprinklers are fitted inside the chute entry section and do not interfere with the loading or fall of the soiled linen.

Electric Interlocks

To give increased operator safety we strongly recommend the use of "time delay" interlocks inside hung door linen chutes.

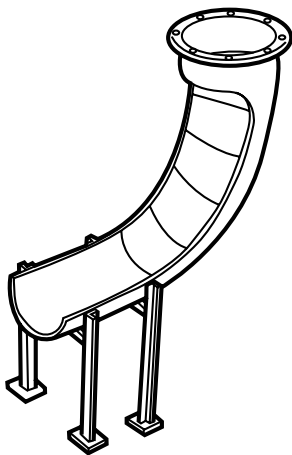
Accessories

The majority of accessories are available with linen chutes as are deceleration tracks, trolleys and containers for carrying bagged or loose linen-the range can be seen in the containers section.

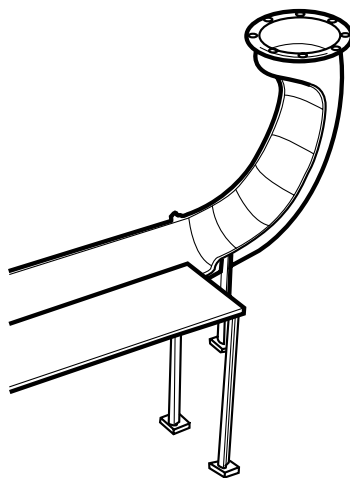
Deceleration Tracks

Soiled linen bags, when fully loaded, can weigh between 25 to 50kgs, dependent on size and the manner in which they are packed. A 50kgs solidly packed bag of soiled linen achieves a reasonably high terminal velocity and it is in this type of situation that SFSP recommends the use of deceleration tracks. For buildings of up to 5 storeys, a short deceleration track should suffice. Obviously, the higher the building the longer the length of deceleration track. Appreciating that floor space is always at a premium, SFSP offers, curved and helical deceleration tracks, to achieve the same result in less space. Deceleration tracks can also be used to bring the bagged linen directly onto a sorting table. Made from stainless steel and jointed by R.S. angle rings. Support stands are made from R.S. angle, painted ready for bolting to floor or wall. Illustrated are standard types. Other lengths and models are available to customer specification to match height and width of the linen chute.

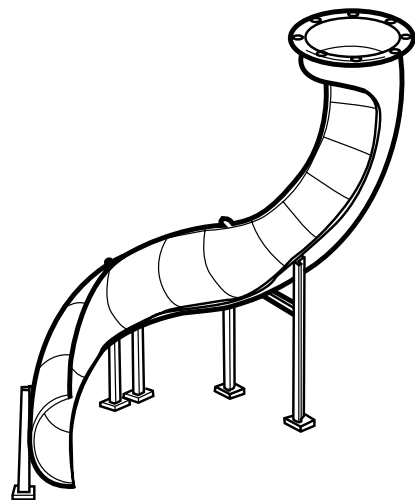
N.B. Drawings show deceleration tracks with cut-out



Straight Short Deceleration Track

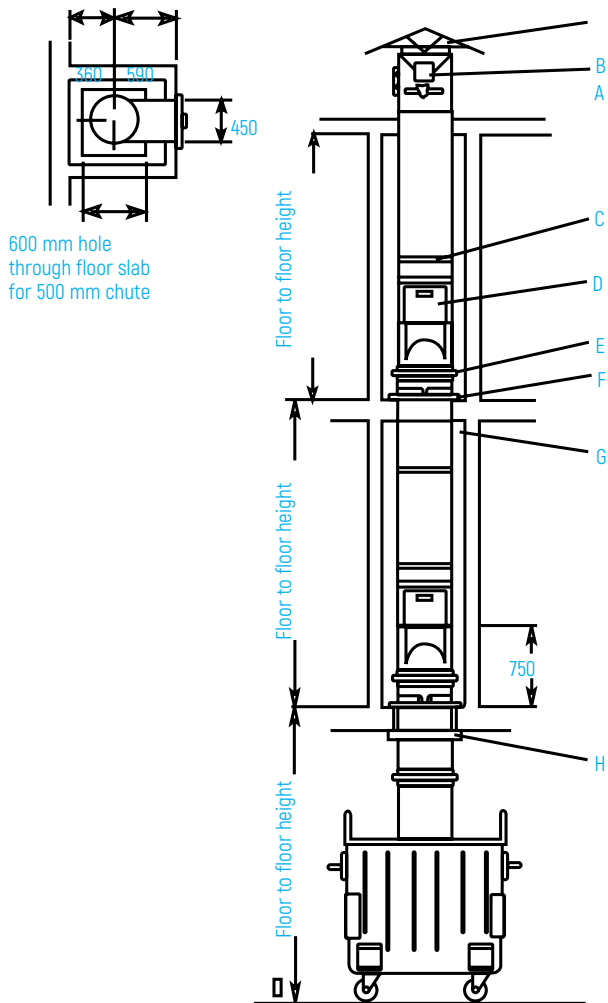


Deceleration Track Delivering Bagged Linen to Sorting Table



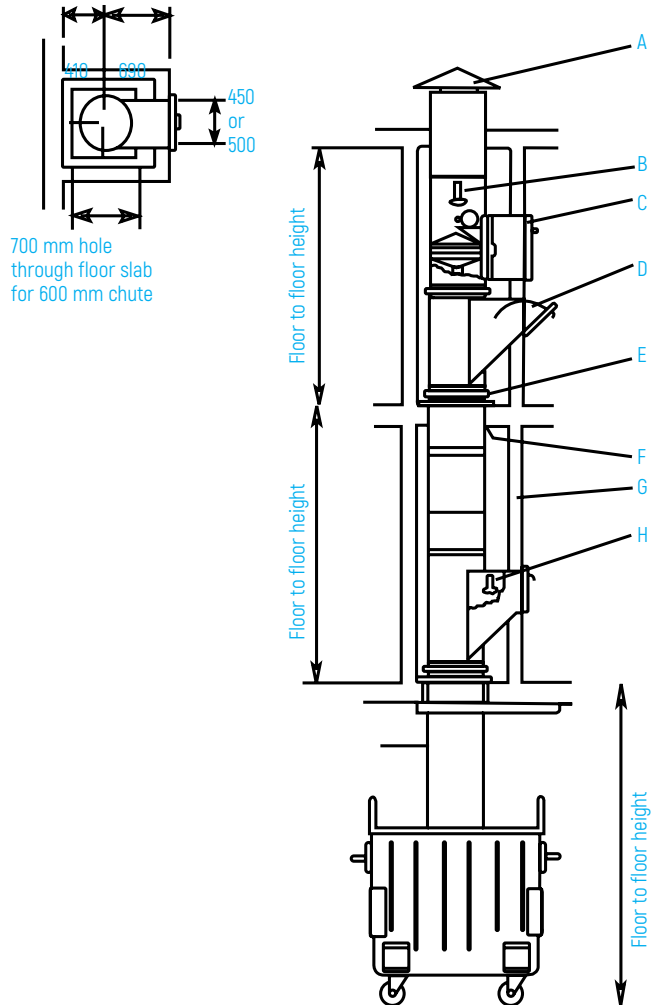
Curved Deceleration Track

REFUSE CHUTES EXAMPLES



ALL DIMENSIONS IN MM

- A. Cowl with insect screen.
 - B. Automatic exhaust air fan with access door.
 - C. 1 1/2 hour fire rated hopper.
 - D. Angle ring joint.
 - E. Floor support frame
 - F. Floor opening to be infilled by contractor.
 - G. Enclosing walls built after chute installation.
 - H. Fire shutter door.
- NB. Flashing of vent pipe to roof by other.



ALL DIMENSIONS IN MM

- A. Full diameter vent and cowl (or as specified)
- B. Disinfecting and sanitizing unit
- C. Automatic chute cleaning system
- D. 1 1/2 hour fire rated hopper
- E. Floor support frame
- F. Floor opening to be infilled by contractor
- G. Enclosing walls built after chute installation
- H. Sprinklers
- I. Fire shutter door
- J. Discharge section

COMPLETE STANDARD REFUSE CHUTE SPECIFICATION FOR A STOREY BUILDING

Part 1: General

*1.01 Included. Supply and installation of refuse chute system, with certain accessories and ancillary equipment as specified.

*1.02 Not Included. The provision of floor drains, water taps, electrical isolator boxes, infill floor slabs and erection of enclosing walls or the connection of electric or water supply to any equipment in this section.

1.03 Authority. The provided equipment shall meet the requirements of BS 1703: 1977 and BS5906: 2005. Design and components currently used in SFSP refuse chutes shall be considered the standard for quality, performance and appearance.

*1.04 Service and Parts. The manufacturer shall maintain the ability to supply spare parts and components, for a period of three years from the date of manufacture.

*1.05 Manufacturer. Products for use in this section shall be provided by: Specialized Factor for Steel products (SFSP)
Jeddah, Kingdom of Saudi Arabia.
Tel. + 966 2 6374482 Fax. +966 2 6361963
(or other equal and approved).

*1.06 Submittals. Following receipt of order the manufacturer shall provide fully dimensioned shop drawings for approval prior to manufacture.

Part 2: Products

*2.01 Supply. As detailed on drawing a mm internal diameter refuse chute system as manufactured by Specialized Factory for Steel Products (SFSP)

*2.02 Material Trunking. All vertical chute trunking, chute entry sections and vent pipes shall be manufactured from mm stainless steel. Stainless steel used in this section shall be type 304 stainless steel to BS 1449 or as specified.

*2.03 Hoppers. Shall be provided to storeys of the refuse chute and manufactured as follows:
The hopper door face will have maximum size of x mm and be designed to ensure that refuse inserted into the hopper cannot cause a blockage in the chute. The hopper shall be self closing and sealing, have a 1 1/2 hour fire rating.

*2.04 Floor Support Frames. The manufacturer shall provide No 35 x 35 x 3mm R.S.A. frames with welded clamp bands. All fixing nuts and bolts to be rust proofed after manufacture.

*2.05 Discharge. The manufacturer shall provide a stainless steel discharge to be connected to the underside of a fire shutter door. Fire shutter shall be automatic in operation and be capable of cutting off the chute and its shaft from the refuse room.

*2.06 Chute Cleaning. The manufacturer shall provide a factory fitted electrically powered automatic chute cleaning system.

The chute cleaning system, to be fitted above the topmost entry section, shall have its own separate housing and side hung, Stainless Steel faced lockable access door. The cleaning system shall consist of a cylindrical housing, with two bands of stiff nylon brushes firmly attached, a geared electric motor, cable, stabilizing weight, flushing head spray and the manufactures standard electric logic control installed to ensure efficient cleaning of the internal surfaces of the chutes.

*2.07 Disinfectant and Sanitizing Unit. A factory fitted disinfectant and sanitizing unit shall be provided. The unit shall be automatic in operation capable of injecting odour counteractant into the supply of the automatic brush cleaning system.

YES	NO
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*2.08 Ventilation. The chute shall extend through the roof, terminating 1.2m above roof level complete with a weathering terminal or as specified.

*2.081 Exhaust Fan. The manufacturer shall provide a Factory fitted foul air exhaust fan, the fan to be fitted internally in the refuse chute above roof level. An access door will be provided for servicing the fan. The fan shall be protected above and below by lightweight Mesh screens, which are to be removable for cleaning. The fan motor shall be 1/6 HP, Class H continuously rated, capable of a 200m³/hour air displacement. Electric supply 220/240v, or 110/120v, 50/60 Hz, 0.8A.

YES	NO
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*2.09 Sound Damping. The total vertical length of all exterior surfaces of the refuse chute shall have a factory applied coating of Sound Damping Compound. The coating shall be applied at the rate of 1.8kgs/m², or to give a coating of not less than the thickness of the substrate.

YES	NO
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*2.10 Chute Construction. The chute shall be fully factory assembled and all joints except those required to separate the sections for shipment and installation, shall be lock seamed or welded. The hopper door shall be bolted in place on the entry sections and checked to ensure proper alignment with the inner baffle plate. Sections shall fit inside the section below and there shall be no bolts, rivets or other projections inside the chute, to impede the free flow of falling refuse. The manufacturer shall provide sealant to ensure all joints are watertight and further provide all other equipment necessary to execute the contract.

*2.11 Automatic off/ on sprinkler, fully automatic currentless

Part 3: Execution

*3.01 Equipment. Shall be protected at all times from physical damage. Immediately upon delivery on site the equipment shall be stored in a safe and weatherproof location.

*3.02 Construction waste. Under no circumstances shall the chute be used for construction waste.

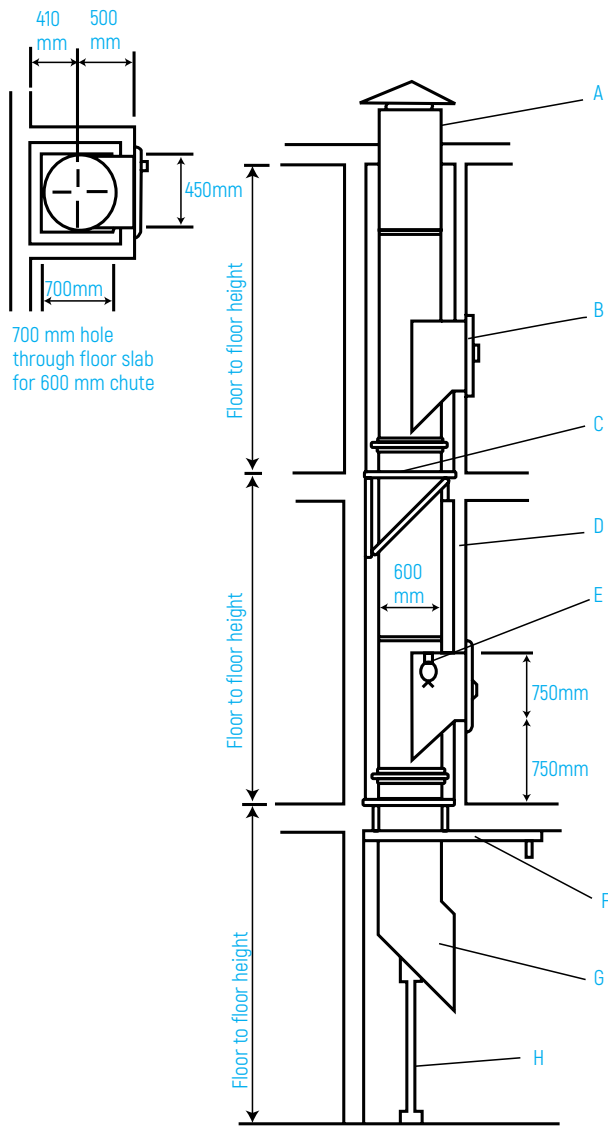
*3.03 Inspection prior to installation. The manufacturer shall inspect the area of installation, verify any dimensions and advise of conditions detrimental to proper and timely completion of the work.

*3.04 Installation. The manufacturer shall where instructed, provide experienced technicians to install the chute. The chute shall be installed in compliance with the manufacturer's standard instruction and shop drawings.

*3.05 Testing and Commissioning. The manufacturer's technician shall test and commission the refuse chute system after repairing or replacing any damaged parts.

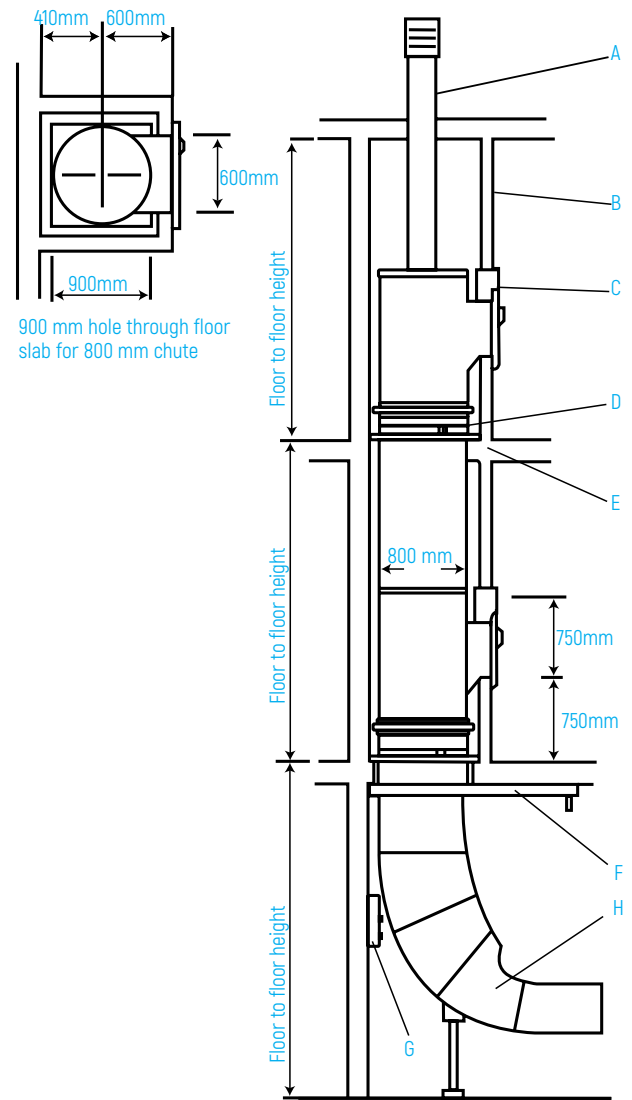
*3.06 Acceptance. The manufacturer's certificate of acceptance shall be signed by the main contractor or client, on successful completion of this work.

*Optional Items-Please Specify Where Required



ALL DIMENSIONS IN MM

- A. Full diameter stainless steel vent (or as specified).
- B. 2 hour fire rated side hung door entry.
- C. Support fixed to shaft wall by special gallows bracket.
- D. Enclosing walls built after erection of chute.
- E. 1/2" sprinkler head to be fitted every other entry.
- F. Fire shutter door fixed to underside of floor slab.
- G. Reinforced angle discharge.
- H. Tubular Support



ALL DIMENSIONS IN MM

- A. 150 mm diameter vent (or as specified).
- B. Face wall built after erection of chute.
- C. Electrically interlocked side hung doors.
- D. Chute support mounted on structural floor.
- E. Floor opening to be infilled by builder.
- F. Fire shutter door fixed to underside of floor slab.
- G. Master control panel for interlocks (1500 mm off floor level).
- H. Short deceleration track.

COMPLETE STANDARD LINEN CHUTE SPECIFICATION FOR A STOREY BUILDING

Part 1: General

*1.01 Supply as detailed on drawings a mm internal diameter linen chute as provided by SFSP.

*1.02 Not Supplied or included in this section, the provision of floor drains, water taps, electrical isolators, infill of floor slabs and erection of any enclosing walls or the connection of electric or water supply to any equipment in this section.

*1.03 Manufacturer. Specialized Factory for Steel Products SFSP, Kingdom of Saudi Arabia.
Tel. + 9662 6374482 Fax. 9662 6361963 . (or other equal and approved)

*1.04 Submittals. The manufacturer shall supply detailed shop drawings for approval prior to manufacture (following receipt of order).

Part 2: Product

*2.01 Material. All vertical chute trunking entry sections and vent pipes shall be manufactured from mm stainless steel Type 304 BS1449 or as specified.

*2.02 Doors. The manufacturer shall provide No.600mm x 600mm stainless steel, fully opening, automatically closing side hung doors. the doors shall be self sealing, with a lockable handle, key to pass and have a 2 hour fire rating.

*2.03 Ventilation. The manufacture shall provide, from the top entry section on the the storey, a top cover plate with sufficient vent pipe of mm diameter to pass through the roof space terminating 1.2 meters above the roof with a terminal and weathering cravat, or as specified.

*2.04 Discharge. The manufacturer shall provide a 2mm stainless steel angled discharge, with a tubular leg for additional support or a deceleration track. The discharge section shall pass through a 1 or 2 hour fire rated, fire shutter door complete with 165°F fusible link. (As specified)

*2.05 Sprinkler. As a fire precaution the Manufacturer shall fit a 15mm sprinkler to the top cover plate, above the entry section on the top floor and/or at every other floor. (Optional)

*2.06 Electric Interlock. The manufacturer shall provide with each side hung door, an electro-magnetic solenoid bolt. The electric interlock system should be mounted in the panel above the entry section. Operation shall be push button, with one indicator lamp, green indicating ready for operation and Red indicating system in use.

The master control box for the interlock system shall be mounted in the laundry room, close to the linen chute discharge point. The interlock system shall operate off a 120/240v electric supply reduced to 24v for safety and shall have a manufacturer's factory fitted preset timer. The timer shall be preset to allow single use of the chute at any given time. (Optional)

*2.07 Construction. The linen chute shall be fully factory fabricated and all joints except those required to separate the sections for shipment and installation, shall be welded or lock seamed tight.
The side hung doors and electric interlocks shall be factory fitted and tested. All chute sections shall fit inside the section below and there shall be no bolts, rivets or other projections inside the chute to impede the fall of the linen. The manufacturer shall provide sealant and all other necessary equipment to successfully execute his contract.

Part 3: Execution

*3.01 Equipment shall be protected at all times from physical damage. Immediately upon delivery on site the equipment shall be stored in a safe and weather proof location.

*3.02 Construction waste. Under no circumstances shall the chute be used for construction waste.

*3.03 Installation. The manufacturer shall, where required, provide experienced technicians to install the linen chute. The chute shall be installed to the manufacturer's standard instructions and shop drawings. The manufacturer's technicians shall test and commission the linen chute system, after repairing or replacing any damaged or non functioning parts.

*3.04 Acceptance. The manufacturer's certificate of acceptance shall be signed by the main contractor or client, on successful completion of this work.

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